R Med
R 11 S68 v.8 no.7
Biological & Medical Serials

The Editorial and Business Offices of the Southern Medical Journal and the Headquarters of the Southern Medical Association have been moved to Birmingham, Alabama, Suite 516 Empire Building.

LIBRARY NOV 6 1946 UNIVERSITY OF TORONTO

VOLUME VIII JULY, 1915 NUMBER 7

Southern Medical Journal

Journal of The Southern Medical Association

THE TRUTH AND THE TRUTH ONLY ON EVERY PAGE FROM COVER TO COVER

TABLE OF CONTENTS

SURGERY, GYNECOLOGY, OBSTETRICS, AND GENITO-URINARY DISEASES.

Cancer Problem. Josept Colt Bloodgood, Baltimore, Md. 557

Cancer and Pre-Cancerous Conditions. M. H. Biggs, Rutherfordton, N. C.. 559

Cancer of the Breast. W. L. Rodman, Philadelphia, Pa. 565

The Operative Treatment of Chronic Intestinal Stasis. William Seamann Bainbridge, New York, N. Y..... 571

The Pathology and Treatment of Cutaneous Cancer. H. H. Hazen, Washington, D. C. 577

Discussed by Alexius McGlannan, Baltimore, Md.; C. Augustus Simpson, Washington, D. C., and E. C. Samuel, New Orleans, La.

On the Importance of Destroying the Cervical Mucosa in Sub-Total Hysterectomy as a Cancer-Preventing Measure. Geo. T. Tyler, Greenville, S. C. 583

Discussed by Wm. Kohlmann, New Orleans, La.; H. Webb Griffith, Asheville, N. C.; Edmund J. Horgan, Fairfax, Va.; Emil Novak, Baltimore, Md.; Edward H. Richardson, Baltimore, Md.

Early Diagnosis of Cancer of the Rectum. E. H. Terrell, Richmond, Va.. 589

Discussed by S. T. Earle, Baltimore, Md.; John L. Jelks, Memphis, Tenn.; Stephen Watts, Charlottesville, Va.

Diagnosis and Treatment of Ectopic Pregnancy—Report of Cases. Wm. C. Gewin, Birmingham, Ala..... 593

The Post-Operative Results in Nine Cases of Gastro-Enterostomy, with One Case in Which More Than Two-Thirds of the Stomach was Resected for Cancer. Gaston Torrance, Birmingham, Ala. 597

AUTHORS' ABSTRACTS: **The Operative Reduction of Fractures Without the Use of Buried Retention Material,** Hermann B. Gessner, New Orleans, La.—**Bladder Irritability in Women,** William H. Cary, Brooklyn, N. Y.—**Treponema Pallidum Found at Autopsy in Blood-Stream and Elsewhere in Case of Congenital Syphilis,** H. C. Clark and I. N. Gates, Ancon, Canal Zone.—**The Endowment of Motherhood,** John F. Moran, Washington, D. C.—**Haemolysis Following Transfusion of Blood; A Study,** Bertram M. Bernheim, Baltimore, Md.—**Nitrous Oxid-Oxygen Anesthesia,** T. C. Burns, Oklahoma City, Okla.—**Anoci-Association in Theory and Practice,** A. B. Cooke, Los Angeles, Calif.—**Penetrating Wounds of Abdomen and Thorax,** A. P. Butt, Davis, W. Va.—**A New Incision for Varicocele Operation When the Scrotum is to Be Amputated,** E. G. Ballenger and O. F. Elder, Altanta, Ga. 600

RAILWAY SURGERY.

The Central Nervous System in Its Relation to Certain Traumatic Affections. J. N. Baker, Montgomery, Ala. 603

Discussed by Tom A. Williams, Washington, D. C., and E. C. Samuels, New Orleans, La.

Case Report. Chas. V. Stephenson, Centreville, Tenn. 607

Discussed by Thos. H. Hancock, Atlanta, Ga.; H. P. Linsz, Wheeling, W. Va.; J. A. Mitchell, Tullahoma, Tenn.; E. T. Newell, Chattanooga, Tenn.

MEDICINE.

Heart Arhythmias. E. C. Thrash, Atlanta, Ga. 609

The Causes of Indigestion—A Study of One Thousand Cases. Douglas VanderHoof, Richmond, Va..... 612

Discussed by Geo. T. Tyler, Greenville, S. C.

The Management of Functional Nervous Affections—Modern Methods Il-

(*Concluded on first ad. page*)

"Chicago Laboratory, 25 E. Washington St., Chicago, Ill., see page XXIX"

City View Sanitarium

(ESTABLISHED 1907)

JOHN W. STEVENS, M. D., Physician-in-charge
Telephone Main 2928
Rural Route No. 1 Nashville, Tennessee

For the Treatment of MENTAL and NERVOUS DISEASES and the ADDICTIONS. New fifty Room Department completed January, 1915. Now have two new buildings. One for each sex. A thoroughly modern and fully equipped private hospital, operating under state license. Large commodious buildings offering accommodations to meet the desires of the most exacting. Situated out of town in a quiet, secluded place. Large shady grounds. Specially trained nurses. Two resident physicians. Capacity 65. References: Medical Profession of Nashville.

St. Elizabeth's Hospital

617 West Grace St., Richmond, Va.

A thoroughly equipped and modern private hospital for surgical and gynecological patients. **Absolutely fire-proof**—a desirable requirement in any building, but a necessity in a surgical hospital. Ventilation perfect—due to general design of architect who is an authority on ventilation, and also to the patent Austral windows, which direct the air current towards the ceiling and not on the patient. ¶Only graduate nurses are employed. ¶All modern conveniences, such as silent electric light signals for patients, vacuum cleaners built in the wall and long distance telephone connection in every bed room. ¶Two large and complete operating rooms with northern light are on the top floor, where they are practically free from dust. The hospital is open the entire year. No wards, only single or double rooms, with or without private bath. Rates, $2.50 per day and up. ¶A limited number of graduate nurses received for post-graduate instruction.

Superintendent, MISS JOSEPHINE McLEOD, A.B., Graduate Nurse of Johns Hopkins Hospital.
J. SHELTON HORSLEY, M.D., Surgeon-in-Charge.

CURRAN POPE A. THRUSTON POPE

A MODERN up-to-date private infirmary equipped with steam heat, electric light, electric fans, modern plumbing and new furnishings. Solicits all chronic cases, functional and organic nervous diseases, diseases of the stomach and intestines, rheumatism, gout and uric acid troubles, drug habits and non-surgical diseases of men and women. No insanity or infectious cases treated. Bed-ridden cases not received without previous arrangement.

Hydrotherapy, Mechanical Massage, Static, Galvanic, Faradic, High Frequency, Arc Light and X-Ray Treatments given by competent Physicians and Nurses under the immediate supervision of the Medical Superintendent. Special laboratory facilities for diagnosis by urine, blood, sputum, gastric juice and X-Ray. Recreation hall with pool and billiards for free use of patients.

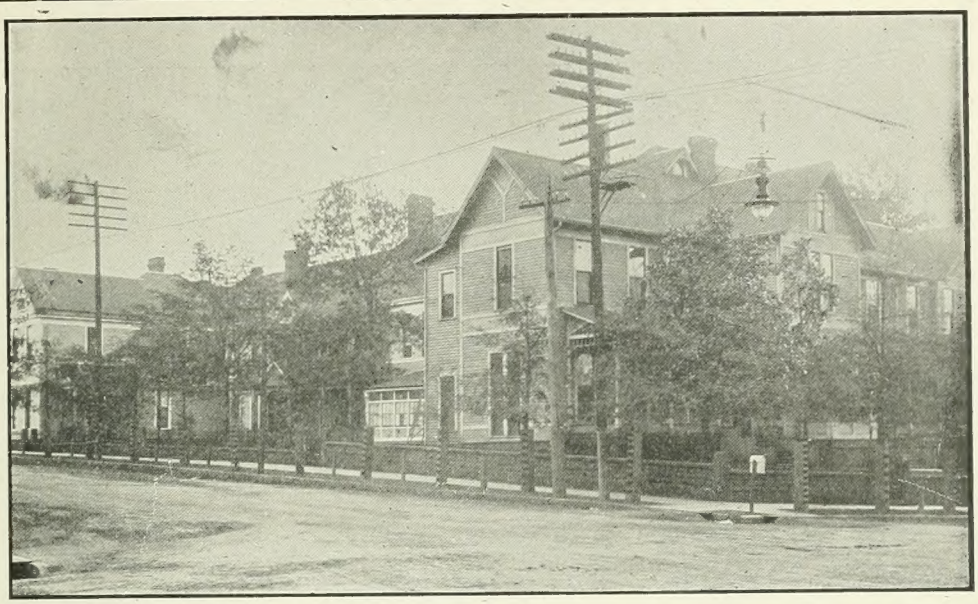
Rates $25 per week, including treatment, board, medical attention and general nursing. Send for large illustrated catalog. The Sanatorium is supplied daily, from the Pope Farm, with vegetables, poultry and eggs; also milk, cream, butter and buttermilk from its herd of registered Jerseys.

THE POPE SANATORIUM

INCORPORATED
Established 1890

Long Distance Phones
CUMB. M. 2122 HOME 2122

115 West Chestnut Street
LOUISVILLE, KENTUCKY



DAVIS INFIRMARY For Diseases of Women and Surgical Cases and Hospital Training School for Nurses

The buildings are well constructed for surgical work. Competent Staff of Consultants and Assistants.

J. D. S. DAVIS, M.D., Birmingham, Alabama.

TABLE OF CONTENTS—*Concluded*

lustrated. Tom A. Williams, Washington, D. C. 616

Discussed by Wm. S. Gordon, Richmond, Va.; J. Allison Hodges, Richmond, Va.

AUTHORS' ABSTRACTS: Some Medical Aspects of Hyperthyroidism, L. F. Barker, Baltimore, Md.—**Bacteriological Study of Mouth Infections in Relation of Systemic Diseases,** August J. Streit, Marlin, Texas.—**Sciatica, a Symptom of Appendicitis,** B. M. Randolph, Washington, D. C.—**Syphilitic Ulcer of the Stomach. Report of a Case Examined Histologically,** H. L. McNeil, Galveston, Texas.—**Epidemic Cerebro-Spinal Meningitis from a Bacteriological Standpoint,** K. R. Collins, Altanta, Ga.—**Paroxysmal Haemoglobinuria—Exhibition of Case,** G. A. Batton, Baltimore, Md.—**The Biologic Classification of Pneumococci and the Serum Treatment of Lobar Pneumonia,** Frederic M. Hanes, Richmond, Va. 623

TROPICAL DISEASES AND PUBLIC HEALTH.

Present Status of Local Health Administration. The Outlook. Oscar Dowling, Shreveport, La. 625

Discussed by J. LaBruce Ward, Columbia, S. C.; R. K. Flannagan, Richmond, Va.

The Condensed Skimmed Milk Menace. M. M. Carrick, Dallas, Texas. 629

Filarial Infection—An Investigation of Its Prevalence in Charleston, S. C. F. B. Johnson, Charleston, S. C. 630

Discussed by C. C. Bass, New Orleans, La.; James V. Freeman, Jacksonville, Fla.

AUTHORS' ABSTRACTS: Impounded Waters, J. A. A. LePrince, U. S. P. H. S.—**A New Bacterial Disease of Rodents Transmission to Man,** William B. Wherry, Cincinnati, O.—**The Laboratory Diagnosis of Bubonic Plague,** J. F. Anderson, Washington, D. C.—**The Treatment and Prevention of Pellagra,** Joseph Goldberger, C. H. Waring and David G. Willets, U. S. P. H. S.—**A Campaign Against Quacks,** W. A. Evans, Chicago, Ill.—**The Negro as a Problem in Public Health Charity,** Lawrence Lee, Savannah, Ga. 635

EYE, EAR, NOSE AND THROAT.

Asthenopic Symptoms Relieved by Correcting Slight Errors of Refraction. T. W. Moore, Huntington, W. Va. 637

Discussed by C. R. Dufour, Washington, D. C.; J. F. Woodward, Norfolk, Va.; W. P. Reaves, Greensboro, N. C.; R. W. Bledsoe, Covington, Ky.; R. G. Buckner, Asheville, N. C.; W. H. Wilmer, Washington, D. C.; E. W. Peery, Lynchburg, Va.

AUTHORS' ABSTRACTS: The Treatment of Pannus, J. B. Ferguson, Muskogee, Okla.—**Some Points on Focal Infection, and Report of Five Cases,** H. H. Stark, El Paso, Texas. 640

EDITORIALS 641

BOOK REVIEWS 646

SOUTHERN MEDICAL NEWS 647

THE MILWAUKEE SANITARIUM

Located at Wauwatosa (a suburb of Milwaukee) on C. M. & St. P. Ry., 2½ hours from Chicago, 15 minutes from Milwaukee, 5 minutes from all cars. Two lines street cars. Complete facilities and equipment as heretofore announced. ¶New Psychopathic Hospital: continuous baths, fireproof building, separate grounds. ¶New West House: rooms en suite with private baths. ¶New Gymnasium and Recreation Building; physical culture, new "Zander" machines, shower baths. ¶Modern Bath House: hydrotherapy, electrotherapy, mechanotherapy. ¶Thirty acres beautiful hill, forest and lawn. Five houses. Individualized treatment.

ENTRANCE WEST HOUSE OFFICE AND BATH HOUSE PSYCHOPATHIC HOSPITAL

RICHARD DEWEY, A.M. M.D. EUGENE CHANEY, M.D. HERBERT W. POWERS, M.D.

CHICAGO OFFICE; Marshall Field Annex Building, 25 East Washington St. Wednesdays 1 to 3, except July and August.

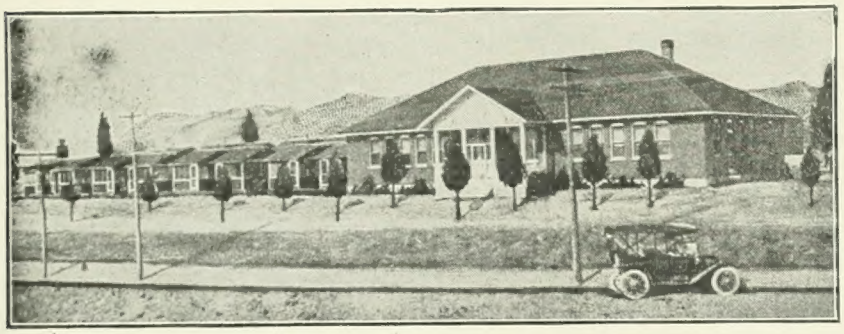
Descriptive Booklet will be sent upon application.

WAUWATOSA, WISCONSIN

for Mental and Nervous Diseases

ESTABLISHED IN 1884

The Cipes Sanatorium for Pulmonary and Laryngeal Tuberculosis, Albuquerque, New Mexico

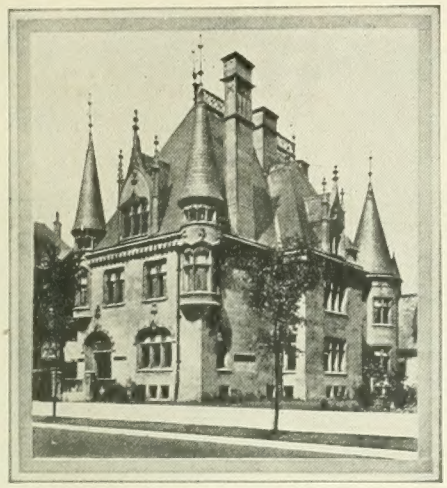


A thoroughly equipped institution for the scientific treatment of tuberculosis. Bungalows with individual screened porches, hot and cold running water bath and toilet in each cottage, electric lights, call bells, etc. Ideal location. Rates $20.00 TO $25.00 per week. No extras. Write for booklet.

Joseph S. Cipes, M.D.
Medical Director.

ST. LUKE'S HOSPITAL
Richmond, Va.

Personally conducted by Dr. Stuart McGuire for the Accommodation of his Surgical Patients.



The HYGEIA SANITARIUM

Exclusively for the Treatment of
Drug Addiction and Alcoholism
Dr. Wm K. McLaughlin, *Medical Supt.*
2715 Michigan Avenue, Chicago, Ill.

DRUG ADDICTION AND ALCOHOLISM

THE HYGEIA SANITARIUM

is maintained exclusively for the treatment of those who have become addicted to the use of drugs, and wish, without suffering or publicity, to be freed from the habit and its craving. The method employed is that described by Dr. Alexander Lambert in the Journal of the A. M. A. under date of June 21, 1913. Each patient is given a thorough examination, clinical and laboratory, and treatment modified in accordance with the findings.

A fixed charge is made on entrance, which covers private room, meals served therein, and all necessary expenses.

Resident Physicians—Trained Nurses

A full account of the Hygeia Sanitarium method will be sent on receipt of the attached coupon.

Please send to the undersigned full information concerning this Treatment. S. M. J.

Name .....

Address .....

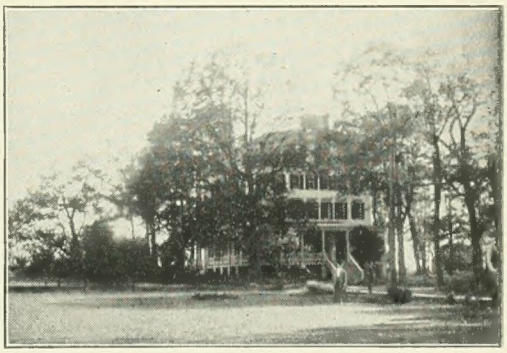
Chestnut Lodge

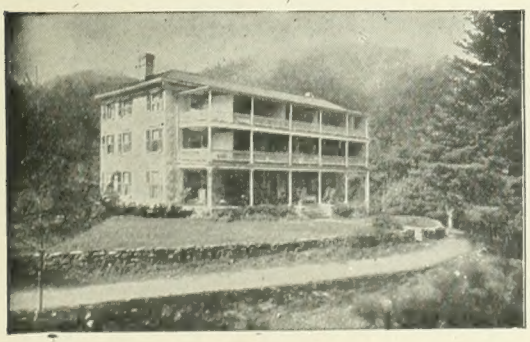
Rockville, Maryland

Near Washington, D. C. Baltimore & Ohio Railroad and Electric Line from Washington

This Sanitarium under experienced management offers superior advantages for the treatment of patients suffering from Nervous and mild Mental Diseases, and for elderly persons needing skilled care and nursing: combining the equipment of a modern Psychopathic Hospital with the appointments of a refined home. The Hydrotherapy Department is complete in every detail including the Nauheim Baths for Arteriosclerosis, Heart and Kidney Diseases.

DR. E. L. BULLARD, Physician-in-Charge





"In the Pines."

Dr. Morse's Sanatorium for Tuberculosis

Hendersonville, North Carolina

Twenty miles South of Asheville, on the main line of the Southern Railway between Cincinnati and Charleston. Probably the finest all-year-round climate in America. Large number of days of sunshine. Altitude 2300 feet above sea level. Stimulating air. Mountain scenery of great beauty. In the very centre of the **"LAND OF THE SKY."** The sanatorium is especially adapted to the treatment of the tuberculous. Private sleeping-out piazzas for every patient. All modern conveniences and good service. Every health-giving condition is supplied. Eighteen acres of natural parkland surround the sanatorium—a scientific institution amid ideal conditions. Physician lives in the sanatorium. Rates $17.50 to $30.00 per week. Booklet on application.

DR. MORSE'S SANATORIUM, Box 395, Hendersonville, N. C.

Patronize our advertisers—mention the Journal when you write them.

THE POTTENGER SANATORIUM

MONROVIA, CALIFORNIA

FOR DISEASES OF THE LUNGS AND THROAT.

A thoroughly equipped institution for the scientific treatment of tuberculosis. High class accommodations. Ideal all-year-round climate. Surrounded by orange groves and beautiful mountain scenery. Forty-five minutes from Los Angeles. F. M. Pottenger, A.M., M.D., LL.D., Medical Director. J. E. Pottenger, A.B., M.D., Assistant Medical Director and Chief of Laboratory. George H. Evans, M.D., San Francisco, Medical Consultant. For particulars address: POTTENGER SANATORIUM, Monrovia, Cal. Los Angeles office: 1100-1101 Title Ins. Bldg., Fifth and Spring Streets.

DR. BRAWNER'S SANITARIUM, Atlanta, Ga.

FOR NERVOUS AND MENTAL DISEASES, GENERAL INVALIDISM AND DRUG ADDICTIONS

Woman's Building. A Cottage. Main Building. Playing Croquet.

The sanitarium is located on the Marietta trolley line, 10 miles from center of city, near a beautiful suburb, Smyrna. Grounds consist of 80 acres. Buildings are steam heated, electrically lighted, and many rooms have private baths. Patients have many recreations, such as tennis, croquet, baseball and automobiling. Reference: The Medical Profession of Atlanta. Address **DR. JAS. N. BRAWNER, 701-2 Grant Bldg., Atlanta, Ga.**

WASHINGTON SANITARIUM---MEDICAL AND SURGICAL.

Modernly constructed buildings and equipment, spacious halls and wide verandas. Located within 7 miles of the National Capitol Building. Surrounded by shaded lawns, forests and running streams. Mild Southern Climate. Laboratory equipped for analysis and tests. Treatment appliances standard, including equipment for various forms of sprays electric and electric light baths, high frequency, sinusoidal and galvanic currents. Vibratory Massage, etc. Thoroughly trained nurses and attendants. Write for Booklet, address Dept. F.

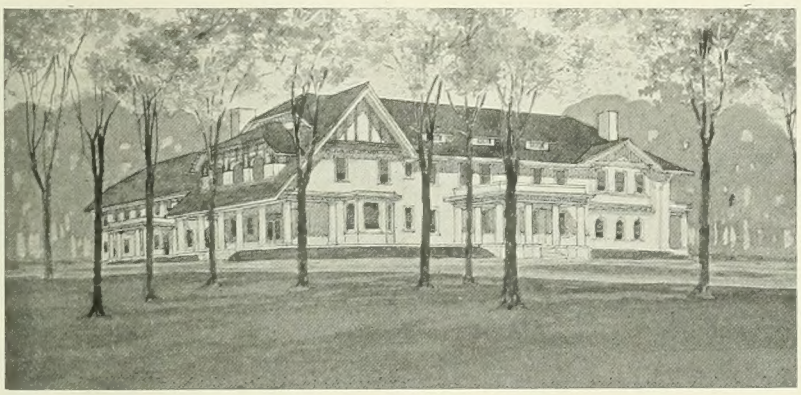
WASHINGTON SANITARIUM, Takoma Park Station, Washington, D. C.

N. B.—Offensive or Contagious Diseases not received.

Patronize our advertisers—mention the Journal when you write them.

LYNNHURST SANITARIUM

For Nervous Diseases, Mild Mental Disorders; an Improved Treatment for Opium-Morphin Addiction, which Eliminates Suffering and Craving



New Buildings Completed in March, 1915

SITUATED in the suburbs of Memphis, Tennessee, on 28 acres of beautiful woodland and ornamental shrubbery. Modern and approved methods in construction and equipment. Thorough ventilation, sanitary plumbing, low pressure, steam heat, electric light and fire protection. Pure water, experienced nurses.

Special facilities for giving hydrotherapy, electrotherapy, massage, physical culture and rest treatment

S. T. RUCKER, M. D., Office, Goodwyn Institute MEMPHIS, TENN.

The Watauga Sanitarium, Ridgetop, Tenn.

In the Foothills of Tennessee's Beautiful and Picturesque Mountains

STAFF

DR. WILLIAM LITTERER, Bacteriologist-in-Chief.
DR. W. A. BRYAN, Surgeon-in-Chief.
DR. J. M. KING, Dermatologist.
DR. G. C. SAVAGE, Eye, Ear, Nose and Throat.
DR. O. N. BRYAN, Diagnostician.
DR. CHAS. A. ROBERTSON, Medical Director.
DR. R. BOYD BOGLE, X-Ray Diagnosis.

For Tuberculosis in All Forms

Location ideal, elevation about 1,000 feet, buildings modern, hot and cold running water, lighted with gas, perfect sewerage, excellent water supply. The Sanitarium operates its own dairy and truck farms. Equipment includes our own steam laundry, and is in every way up to now.

Tuberculins and Vaccines Administered

in suitable cases. Heliotherapy modified, after the method of Rollier. Rates very reasonable. Address

THE WATAUGA SANITARIUM, Ridgetop, Tenn.

or Mr. James A. Yowell, Mr. Joe E. Yowell, Sec.-Treas., 623 Stahlman Bldg., Nashville, Tenn.

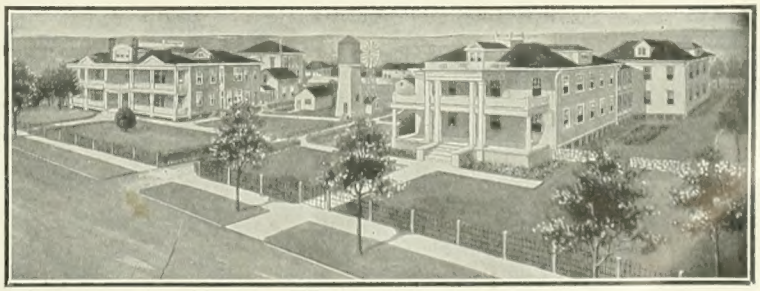
ARLINGTON HEIGHTS SANITARIUM

(Incorporated Under the Laws of Texas.)

For Nervous Diseases, Selected Cases of Mental Diseases, Drug and Alcohol Addictions.

P. O. Box 978 Ft. Worth, Tex.

WILMER L. ALLISON, M. D., Supt. and Resident Physician. For several years first Ass't. Supt. of Asylum at San Antonio, Tex.
JAMES D. BOZEMAN, M. D., Resident Physician.
BRUCE ALLISON, M. D., Resident Physician.
JOHN S. TURNER, M. D., Consulting Physician. Late Supt. of Terrell Asylum.



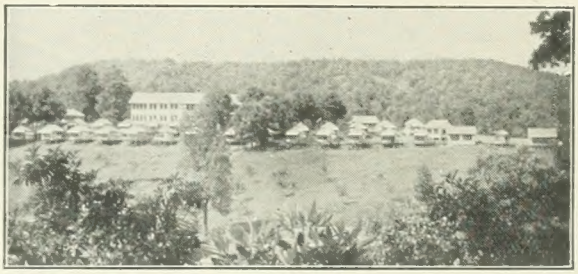
Patronize our advertisers—mention the Journal when you write them.

DR. MARY E. LAPHAM DR. STURTEVANT MACPHERSON, Resident Physician

Highlands Camp Sanatorium

HIGHLANDS, N. C.

A fully equipped private institution for the treatment of diseases of the lungs and throat, situated amid beautiful surroundings in the mountains of Western North Carolina at an altitude of 3850 feet (greatest altitude of any town east of the Rocky Mountains.)



Steam heat, electric lights and call bells and all other modern conveniences. Complete X-Ray equipment. The latest approved methods of Europe and America used.

Daily auto livery service between Highlands and Seneca and Walhalla, S. C.

WINTER CLIMATE IDEAL.

SYMPTOMATIC

FOOD—The very best the market affords.

NURSING—Head nurse, two trained nurses, one special nurse for diet cooking.

ALTITUDE AND CLIMATE—3,850 feet above sea level. This height, together with the southern latitude, produces an ideal year-'round climate for the treatment of pulmonary troubles. Increases resistence through the rise of blood pressure, number of red blood cells and per cent. of hemoglobin—is singularly bracing and strengthening—a strong tonic to digestion.

SPECIFIC

IMMUNIZATION—With Dr. von Ruck's vaccine under the supervision of Dr. Sturtevant Macpherson.

Dr. Macpherson was associated with the von Rucks from the incipiency of this line of treatment, and is thoroughly familiar with every phase of its development and application.

For Booklet, write

F. D. COBURN

Manager

SURGICAL

For Progressive Cases Only.

FOR BRONCHIETATIC CAVITIES—We advise ligation of the pulmonary vessels according to Sauerbruch and Bruns.

FOR FAR-ADVANCED CASES WITHOUT COMPLICATIONS—We compress the lung according to Forlanini. In four years this method has given us over thirty per cent. of marked improvement in advanced cases utterly beyond the reach of medical efforts.

WHEN ADHESIONS PREVENT THE COMPRESSION OF THE LUNGS—We advise its collapse by a Sauerbruch operation.

FOR APICAL CAVITIES NOT COLLAPSED BY AN ARTIFICIAL PNEUMOTHORAX—We advise direct compression according to Baer.

The Jackson Health Resort

On the Delaware, Lackawanna & Western Railway

Dansville, New York

The growth of 56 years of experience in Caring for Invalids

Spend your **Summer in the North** at this leading health resort.

For seekers after Health and Rest. A real HEALTH resort for those who are SICK, and a real REST resort for those who are TIRED OUT.

Situated amid delightful picturesque scenery. Fireproof main building, equipped with every appliance for sanitation, comfort and treatment.

Physicians will make no mistake in directing patients to THE JACKSON. . . . . Write for literature.

OXFORD RETREAT

OXFORD, OHIO

Nervous and Mental Diseases
Alcohol and Drug Addictions
FOR MEN AND WOMEN

96 Acres Lawn and Forest. Buildings Modern and First-Class in all Appointments. Thoroughly Equipped. Of Easy Access—39 Miles from Cincinnati, on C. H. & D. R. R. 10 Trains Daily.

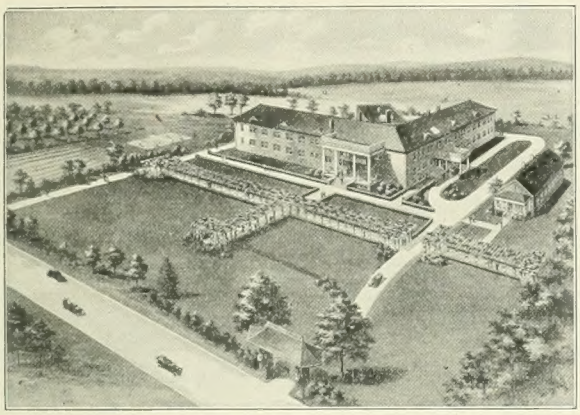
THE PINES

An Annex for Nervous Women
Write for Descriptive Circular
R. HARVEY COOK, M.D., Physician-in-Chief

THE CHESTON KING SANITARIUM

SUCCESSOR TO HOWELL PARK SANITARIUM

PEACHTREE ROAD, ATLANTA, GA. R. F. D. No. 4.



For the treatment of

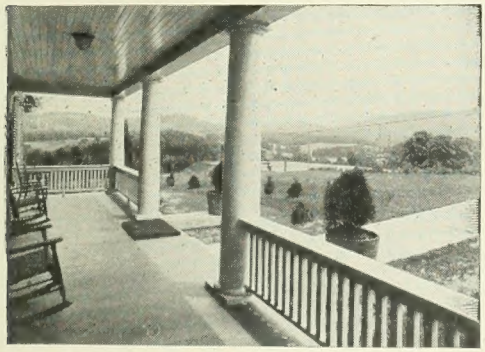
NERVOUS AND MENTAL DISEASES
ALCOHOL AND DRUG ADDICTIONS

The South's most beautiful Sanitarium, completed August, 1914, on acreage of Peachtree Road, twenty minutes drive from Atlanta, and situated between The Capital City Country Club and Greater Oglethorpe University. The buildings are of concrete, pressed brick and tile roof, all rooms are outside, with a purpose single to light and ventilation. Complete system of baths. The water supply is from an artesian well.

There is installed in all the buildings vapor heat and the indirect lighting system. All of the latest approved treatments are used. Patients admitted to our Sanitarium, can have all the rest and exercise indicated and yet will not come in contact with any objectionable case. A physician is in constant attendance.

Mail Address: DR. CHESTON KING,
DR. LEWIS M. GAINES, Medical Directors.
ATLANTA, GA., R. F. D. No. 4, or
1023 Empire Bldg.

DR. W. A. GARDNER,
Asst. Med. Director.



HIGHLAND HOSPITAL

ASHEVILLE, N. C.

(SUCCEEDING DOCTOR CARROLL'S SANITARIUM)

A modern, thoroughly equipped institution for the care of selected nervous, mental and habit cases, employing all rational methods of treatment, emphasizing climate, diet, water, rest, and giving particular attention to out-of-door occupation treatment or work cure. No tubercular patients accepted under any conditions.

For booklet address

Robt. S. Carroll, M. D., Medical Director Highland Hospital, Asheville, N. C.

ALBUQUERQUE SANATORIUM FOR TUBERCULOSIS

ALBUQUERQUE, NEW MEXICO

ALTITUDE 5,100 FEET RATES MODERATE NO EXTRAS CLIMATIC CONDITIONS UNSURPASSED

A private sanatorium where the closest personal attention is given each patient. Complete laboratory and X-Ray equipment for diagnostic purposes. Compression of the lung and sun-bath treatment after the method of Rollier. Steam heat, hot and cold water, electric lights, call bells, local and long distance telephones and private porches for each room. Bungalows if desired.

Situated but 1½ miles from Albuquerque, the largest city and best market of New Mexico. Permits of excellent meals and service at a moderate price. **Write for Booklet B.**

A. G. SHORTLE, M. D., L. S. PETERS, M. D., Associate Physicians.

HIGH OAKS

Lexington, Kentucky

Dr. Sprague's Sanatorium

for nervous and mild mental diseases, liquor and drug addictions. Twenty-five years experience in treating these cases. Especially trained nurses. Hydrotherapy, Electricity, Vibration Massage. A psychopathic hospital for acute cases combined with comfortable home for quiet patients unable to live in private families. For the latter cases, lower rates are made for extended periods. 81 acres. New buildings. Beautifully wooded grounds. Resident musicians. In and out door games. Address, GEO. P. SPRAGUE, M.D., Lexington, Ky.

GLOCKNER SANATORIUM

NORTH TEJON
COLORADO SPRINGS, COL.

CLIMATE
CARE
COMFORTS

For
Pulmonary
Cases

SOUTH FRONT

FOUNDED IN 1889

A $300,000 Sanatorium with surgical annex, modern buildings and equipment. Located amid scenic grandeurs. For 25 years successfully engaged in caring for the health-seeker. Rates $15 to $35 per week. Write for catalog, mentioning this Journal.

WAUKESHA SPRINGS SANITARIUM

FOR THE CARE AND TREATMENT OF

NERVOUS DISEASES

BUILDING ABSOLUTELY FIREPROOF

BYRON M. CAPLES, M.D., Supt.
WAUKESHA, WIS.

New Mexico Cottage Sanatorium

E. S. BULLOCK, M.D.
Physician-in-Chief
I. D. LOEWY, M.D.
Associate Physician

—FOR THE TREATMENT OF—

TUBERCULOSIS

WAYNE MacVEAGH WILSON, Manager
E. D. NIXSON, Assistant Manager

No region in the world equals the high altitude section of the southwestern portion of the United States for the treatment of tuberculosis. And of all the cities and towns in this section, SILVER CITY stands preeminent as a health resort.

Wonderful all-year-round climate. Moderate winters. Cool summers. Over three hundred days of sunshine each year. Hemorrhages rare. Night sweats unknown.

Splendidly equipped institution. Tuberculin in selected cases. Artificial pneumothorax. Heliotherapy. X-ray. Rates moderate.

Write for illustrated booklet.

The Land-of-the-Well Country—Silver City, New Mexico

DR. MOODY'S SANITARIUM

SAN ANTONIO, TEXAS

FOR NERVOUS AND MENTAL DISEASES, DRUG AND ALCOHOL ADDICTIONS, AND NERVOUS INVALIDS NEEDING REST AND RECUPERATION

Established 1903. Strictly ethical. Location delightful summer and winter. Approved diagnostic and therapeutic methods. Modern clinical laboratory. 7 buildings, each with separate name, each featuring a small separate sanitarium, all rooms with outside exposure. Ideal recreation, indoor and outdoor, social and home-like comforts. Bath rooms en suite, hot water heat, electric lights, elevator service. 15 acres, 450 shade trees, cement walks, playgrounds. Surrounded by beautiful parks. Overlooking Fort Sam Houston and Country Club.

G. H. MOODY, M.D., Supt. T. L. MOODY, M.D., Res. Phys. J. A. McINTOSH, M.D., Res. Phys

THE MERIWETHER HOSPITAL AND TRAINING SCHOOL FOR NURSES, Inc.

ASHEVILLE, N. C.

Since the death of Dr. F. T. Meriwether, his magnificent institution has been converted into a general hospital, receiving Surgical, Gynecological and Medical cases

The staff as selected by the management is as follows

MEDICAL—Dr. C. P. Ambler, Dean; Dr. M. L. Stevens, Dr. C. E. Cotton, Dr. A. F. Reeves.

SURGICAL—Dr. Eugene B. Glenn, Vice-Dean; Dr. F. Web Griffith.

EYE, EAR, NOSE AND THROAT—Dr. E. R. Russell, Dr. J. B. Green, Dr. R. G. Buckner.

NEUROLOGY—Dr. R. S. Carroll.

GASTROENTEROLOGY—Dr. A. W. Calloway.

DERMATOLOGY—Dr. W. C. Brownson.

PEDIATRICS—Dr. L. W. Elias.

G. U. AND DISEASES OF THE RECTUM—Dr. P. R. Terry.

ANESTHETIST AND HOUSE PHYSICIAN—Dr. W. J. Hunnicutt.

ALL COMMUNICATIONS SHOULD BE ADDRESSED TO

MISS FLORENCE PITTS, Superintendent, or MR. D. L. MERIWETHER, Business Manager

24 GROVE ST., ASHEVILLE, N. C.

Dr. Board's Sanatorium

OFFICERS AND DIRECTORS

Dr. Milton Board, Pres. and Supt. (Late Supt. West. Ky. Asylum for the Insane.) (Late Member of Ky. State Board of Control Charitable Institutions.)

Dr. J. T. Windell, Vice-President.

Dr. Earl Moorman, Secy. and Asst.

Dr. W. E. Gardner, (Supt Central Ky. Asylum.)

Dr. A. T. McCormack
Dr. Leon L. Solomon
Dr. Irvin Abell

TELEPHONES.

Cumberland ...S. 480
Home 5996

REFERENCE.

The Medical Profession of Kentucky.

A modern, thoroughly equipped private institution for the treatment of *MENTAL AND NERVOUS DISEASES, DRUG ADDICTIONS AND ALCOHOLICS.*

Situated in the heart of the city, convenient and easy of access yet quiet and secluded. Opposite beautiful Central Park. Terms $20.00 to $35.00 per week. Outside patients charged office fees. For further information address

DR. MILTON BOARD, Supt., 1412 Sixth St., Louisville, Ky.

Patronize our advertisers—mention the Journal when you write them.

OCONOMOWOC HEALTH RESORT - - OCONOMOWOC WISCONSIN

New Building Absolutely Fireproof

For Nervous and Mild Mental Diseases and Addiction Cases

Five minutes walk from Interurban between Oconomowoc and Milwaukee
On main line C. M. & St. Paul Railway, 30 miles west of Milwaukee.

Built and equipped to supply the demand of the neurasthenic, border-line and undisturbed mental case, for a high-class home free from contact with the palpably insane, and devoid of the institutional atmosphere.

Forty-one acres of natural park in the heart of the famous Wisconsin Lake Resort region. Rural environment, yet readily accessible. A beautiful country in which to convalesce.

The new building has been designed to encompass every requirement of modern sanitarium construction, the comfort and welfare of the patient having been provided for in every respect. The bath department is unusually complete and up-to-date.

Number of patients limited, assuring the personal attention of the resident physician in charge.

Arthur W. Rogers, B.L., M.D., Resident Physician in Charge

Kenilworth Sanitarium

(Established 1905)

Kenilworth, Illinois

(C. & N. W. Railway. Six miles north of Chicago)

Built and equipped for the treatment of nervous and mental diseases. Approved diagnostic and therapeutic methods.

An adequate night nursing service maintained. Sound proof rooms with forced ventilation. Elegant appointments. Bath rooms en suite, steam heating, electric lighting, electric elevator.

RESIDENT MEDICAL STAFF;

Margaret S. Grant, M.D. Sherman Brown, M.D., Sanger Brown, M.D.,

Chicago Office 59 East Madison Street.

Telephone Randolph 5794. Hours 11 to 1, by appointment only.

All correspondence should be addressed to

Kenilworth Sanitarium. - Kenilworth, Illinois

SIELING'S SANITARIUM

Pine Crest, Phone, Caton 334 Catonsville, Md.

HENRY B. KOLB, M.D., Medical Director, Phone, South 80

For circular and rates, address Supt., Miss Anna A. Sieling, R.N.

A well equipped Sanitarium for the treatment of **Mental** and **Nervous Diseases, Drug** and **Alcohol Habits,** etc.

Private Maternity Home

For deserving unfortunate, unmarried girls, recommended by their physician. Quiet, homelike exclusive, protective, strictly ethical. Good homes for infants provided if desired. Rates reasonable. Correspondence and co-operation solicited from physicians.

Address: ROSE MASSOTH, R. N. Supt

ARGO LYING-IN HOSPITAL

ARGO, ILLINOIS, Cook Co Phone Summit 178 M.

PEARSON HOME

FOR THE TREATMENT OF

Drug Addictions

Avoidance of shock and suffering enables us to treat safely and successfully those extreme cases of morphinism that from long continued heavy doses are in poor physical condition.

Hillsdale, Baltimore County, Maryland.

SOUTH HOUSTON MATERNITY SANITARIUM

Box 596, Houston, Texas.

Twenty-five minutes ride from Houston on the Interurban. Take car at Texas and Main streets. Long distance telephone in Sanitarium.

TO THE MEDICAL PROFESSION:

I desire to call attention to my private Maternity Home for patients before and during confinement.

This institution is home like in every particular, screened throughout; hot and cold baths and all other customary conveniences.

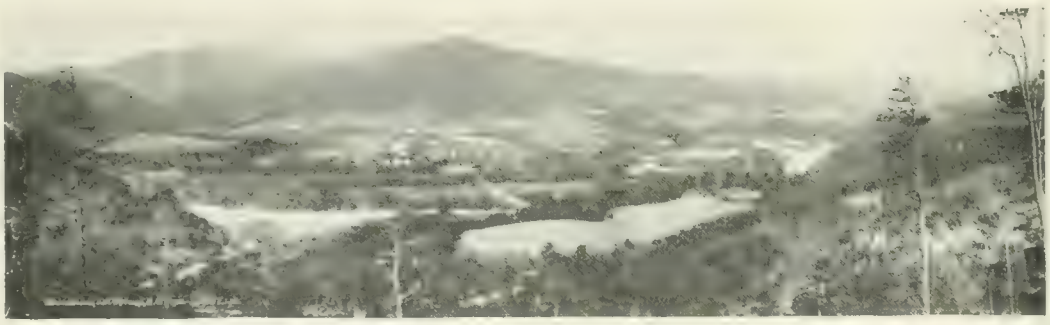
I will accept the guarantee of the regular medical profession and will ask no questions of patients, treating such with the utmost courtesy at all times.

I am prepared to secure the adoption of infants into first-class homes, as I have applicants on hand from the best people at all times.

I am in a position to secure the best medical service in the city, and have in constant attendance the necessary number of trained nurses. Patients are at liberty to use the physician of their choice, provided such physician is an ethical, legal practitioner.

Interurban car line passes within a block of the Home. I will attend to baggage, etc. Full directions, and any further information by mail.

MRS. J. C. McDEARMON, Matron.



VALLEY OF HOT SPRINGS

Hot Springs Hotel and Hot Mineral Baths

The Best Place for Physicians, Their Families and Patients

Dietetic, Hydrotherapeutic, Mechanical and Electric Treatment provided for those desiring it and the care of a thoroughly competent physician.

Hot Mineral Baths for Rheumatism and Stomach Disorders. *Electric Baths, Massage, Medical Gymnastics, and* other valuable water and electrical treatments in our well equipped Sanitarium Department. Dietetic Treatment of various diseases.

RECREATION FOR EVERYBODY—Trained Instructors at your service for Tennis, Golf, Boating, Swimming, Horseback Riding, Mountain Climbing, Aesthetic Dancing, Indoor Baseball, Basketball, Gymnasium and Games. Regular Systematic Exercise out-of-doors, cool nights for sleep. Pure air, water and [illegible]

REST—RECREATE—RETURN TO NATURE. You are not going to Europe because of war. You are not going to California because of confusion and fatigue. You are coming to Hot Springs because of assured rest and recreation.

Summer School of Physical Education and Play, under suspices of Southern Normal College.

Mountain Park Boys' and Girls' Camps—In the Really Truly Mountains. Want to [illegible] while you rest in the summer.

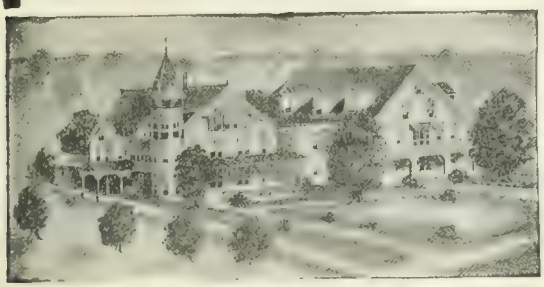
We desire the presence, the patronage and friendly criticism of other physicians of the South. For Booklet send to

Hot Springs Hotel and Sanitarium

Hot Springs N. C.

PETTEY & WALLACE SANITARIUM

958 S. Fifth Street
MEMPHIS, TENN.



FOR THE TREATMENT OF

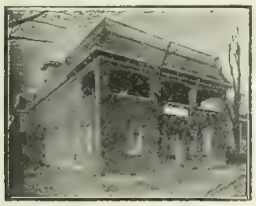
Drug Addiction, Alcoholism, Mental and Nervous Diseases

A quiet, home-like, private, high-class institution. Licensed. Strictly ethical. Complete equipment. Best accommodations.

Resident physician and trained nurses.

Drug patients treated by Dr. Pettey's original method under his personal supervision.

Detached building for mental patients.



DOWNEY HOSPITAL

A new, modern, up-todate two-story building with roof garden, equipped with steam heat, electric lights, electric signal system and new furnishings. All rooms outside, with or without private bath; hot and cold water in each. Fully equipped sterilizing and operating roms. Patients admitted suffering from Gynecological, Obstetrical, Abdominal and General Surgical conditions. Limited number of medical cases accepted. No contagious, alcoholic or mental cases admitted. Trained graduate nurses and excellent training school. For further information, address **DOWNEY HOSPITAL, Gainesville, Ga.**

Dr. Barnes' Sanitarium - - Stamford, Conn.

For Mental and Nervous Diseases and General Invalidism

Splendid location overlooking Long Island Sound and City. Facilities for care and treatment **unsurpassed**. Separate department for cases of inebriety. **60 minutes from New York City. For terms and informatiton apply to**

F. H. BARNES, M. D., Stamford, Conn. Long Distance Telephone 1867

Dr. Broughton's Sanitarium

ESTABLISHED 1901

For OPIUM, MORPHINE, COCAINE and OTHER DRUG ADDICTIONS, INCLUDING ALCOHOL and SPECIAL NERVOUS CASES. Methods easy, regular, humane. Good heat, light, water, help, board, etc. Number limited to 44. A well kept home. Address, DR. BROUGHTON'S SANITARIUM, or, DR. G. A. WEIRICK, Phone 536, 2007 South Main Street ROCKFORD, ILLINOIS.

THE CINCINNATI SANITARIUM

INCORPORATED 1873.

FOR MENTAL AND NERVOUS DISEASES.

A strictly modern hospital, fully equipped for the scientific treatment of all nervous and mental affections. Situation retired and accessible. For details, write for descriptive pamphlet.

F. W. LANGDON, M.D., Medical Director.
B. A. WILLIAMS, M.D., Resident Physician.
EMERSON A. NORTH, M.D., Resident Physician
GEORGIA E. FINLEY, M.D., Medical Matron.
H. P. COLLINS, Business Manager.

BOX 4, COLLEGE HILL, CINCINNATI, OHIO.

THE NEUROLOGICAL SANATORIUM

Incorporated

PRIVATE SANATORIUM OF

DR. BEVERLEY R. TUCKER

A private institution for the treatment of **Nervous Diseases.** Equipped with Hydrotherapy, Medical Electricity, Exercises and Massage. Nurses trained in the care of nervous patients.

102 and 104 E. Grace St., Richmond, Va.

DR. LIVINGSTON'S HOSPITAL

HOT SPRINGS, ARKANSAS

Rates $10.00 to $35.00 per week, including room, board, general nursing and medical attention. Examination and surgical operations extra. Address

JOS. J. LIVINGSTON, - M. D.

PHYSICIAN AND SURGEON IN CHARGE

Glenwood Park Sanitarium

GREENSBORO, NORTH CAROLINA

Succeeding Telfair Sanitarium

W. C. Ashworth, M.D., Superintendent.

A strictly ethical institution offering superior advantages for the scientific treatment of Nervous Diseases, Drug and Alcoholic Addictions. A modern building of 40 rooms, well heated and lighted and fully equipped with hot and cold baths, up-to-date electrical apparatus, etc. Charming location in quiet suburb, where all publicity can be avoided. Patients given humane treatment. Gradual reduction method used in all habit cases. Write for terms.

The Stewart Home and School

For Nervous, Backward, Feeble-Minded Children and Adults

One of the best equipped private institutions in the country providing Mental and Physical development. Cottage system. Free bathing. Electric lighted and steam heated. Delightfully located on estate of 500 acres in the blue grass section of Kentucky. Highly endorsed by prominent physicians and patrons. A beautiful book will be mailed upon application.

Dr. JNO. P. STEWART,

Box 3, Farmdale, Ky.

MISS COMPTON'S SCHOOL

FOR CHILDREN OF RETARDED MENTALITY

Established 1901

Limited to ten pupils—teacher for every two pupils—open entire year—ten and twelve month terms. Address

FANNIE A. COMPTON, Principal

3809 Flad Ave., ST. LOUIS, MO

Medical College of Virginia

UNIVERSITY COLLEGE OF MEDICINE
MEDICAL COLLEGE OF VIRGINIA

(Consolidated)

Medicine - Dentistry - Pharmacy

STUART McGUIRE, M.D., Dean

New college building, completely equipped and modern laboratories. Extensive Dispensary service. Hospital facilities furnish 80 clinical beds; individual instruction; experienced faculty; practical curriculum. Seventy-sixth session opens September 15, 1914. For catalogue or information address

J. R. McCAULEY, Secretary,

1140 E. Clay Street Richmond, Virginia

Patronize your advertisement in the Journal which you write from.

New York Polyclinic Medical School and Hospital

341-351 West 50th St., New York City

General, Separate Clinical and Special Post-Graduate Courses of Individual Instruction given throughout the year, beginning at any time, and for any period of time. Laboratory, Cadaver and Operative Courses in all branches. Instruction planned to meet individual requirements. Courses of Practical Work under tutelage, for periods of three months, six months, one year, for specialists. Individual Instruction in the following branches:

Major and Minor Surgery
Hernia (local anesthesia)
Cystoscopy (male and female)
Urethroscopy and Endoscopy
Neurology and Neurological Surgery (brain, spinal cord, peripheral nerves)
Dermatology (skin pathology)
Gynecology (operative; non-operative)
Rectal Diseases
Anesthesia
Physical Diagnosis
Infant Feeding and Diagnosis
Tuberculosis (pulmonary, glandular, bone)
Drug Addictions and Toxemias
Diseases of Stomach (dietetics)
X-Ray nnd Electro-Therapeutics

State particular information desired when writing.
Address inquiries to JOHN A. WYETH, M. D., LL. D., President of the Faculty
or MR. JAMES U. NORRIS, Superintendent

NEW ORLEANS POST-GRADUATE SCHOOL OF MEDICINE

WINTER SESSION BEGINS OCTOBER 26TH.

UP-TO-DATE POST-GRADUATE INSTRUCTION to meet the requirements of the General practitioner or the Specialist in all branches of Medicine and Surgery.

ABUNDANT CLINICAL MATERIAL. Unexcelled clinical facilities in all the hospitals of the city of New Orleans, particularly the Great Charity Hospital where members of the faculty occupy the highest positions on the Visiting Staff.

FACULTY LARGE, permitting *individual instruction* and *special work* if desired.

For further information address Joseph A. Danna, M. D., Secretary, Suite 716 Maison Blanche Bldg., New Orleans, La.

THE RICHARD GUNDRY HOME

HARLEM LODGE
CATONSVILLE, NEAR BALTIMORE, MARYLAND

ESTABLISHED IN 1891

A well equipped sanitarium and a delightfully homelike, restful place, for the care and treatment of nervous and mild mental cases, drug and alcoholic addictions. For rates and illustrated booklet, apply to

Dr. Richard F. Gundry, Catonsville, Md.

UNIVERSITY OF

GEORGIA

MEDICAL DEPARTMENT

FOR CATALOGUE, ADDRESS
W. C. LYLE, M.D., Vice-Dean
AUGUSTA, GEORGIA

The

JEFFERSON MEDICAL COLLEGE

Of Philadelphia

Founded 1825. A Chartered University Since 1838.

91st Annual Session Begins Sept. 24, 1915

Admission:

Medical Preparatory Course.

Instruction.

Equipment

Ross V. Patterson, M. D.
Sub-Dean

Atlanta Clinical Laboratory

10th Floor Candler Bldg.
Atlanta, Georgia

Wassermann's	$ 5 00
Tissue examinations	5 00
Urines	3 00
All smears	2 00
Gonnococal fixation test	5 00
Autogenous Vaccines	10 00

Dr. C. W. GOULD, Manager
Dr. R. C. CURTIS, Assistant

MINERAL WELLS, TEXAS

AN AMERICAN SPA

Natural Mineral Waters

THE COMMERCIAL CLUB
MINERAL WELLS, TEXAS

Patronize our advertisers—mention the Journal when you write them.

FOUNDED 1854

FOUNDED 1854

EMORY UNIVERSITY

Atlanta Medical College

Atlanta, Georgia

Sixty-first Annual Session Begins September 27, 1915

ADMISSION.—Completion of four-year course at an accredited high school, which requires not less than 14 units for graduation, and in addition, one year of college credits in Physics, Biology, Inorganic Chemistry and German or French. The "Pre-medical" Course will be given in the College of Liberal Arts at Oxford, Ga., instead of in the Medical College as heretofore. Admission to the Pre-medical Course may be obtained by presenting credentials of the 14 units of high school work.

COMBINATION COURSES.—A student may enter the regular Freshman class on 14 units and attend the College of Liberal Arts for two years, after which he will be admitted to the Freshman Medical Class, and upon the completion of his Sophomore year in the Medical College can obtain the degree of Bachelor of Science, gaining his M.D. degree after another two years at the Medical College. In other words, a student, after graduation from a high school, can obtain both the B.S. and M.D. degrees in six years.

INSTRUCTION. — Thorough laboratory training and systematic clinical teaching are special features of this institution. The faculty is composed of 100 professors and instructors, ten of whom are full-time salaried men. A recent endowment by Emory University puts this institution on a sound financial basis.

EQUIPMENT.—Four large modern buildings devoted exclusively to the teaching of Medicine, well equipped laboratories, reference library, with all the principal medical journals, in charge of a competent librarian.

HOSPITAL FACILITIES.—The Grady (municipal) Hospital of 250 beds is in charge of the members of the medical faculty during the entire college session, and Senior students (in small sections) are given daily clinical and bedside instruction there. In the near future, work will begin on the new Wesley Memorial Hospital (of 200 beds) at a cost of not less than $200,000.00 which will be erected on or near the site of the present Medical College. The wards of this hospital, when completed, will be under the complete control of the faculty for teaching purposes.

RATING.—This college is rated as a class A medical school by the Council on Medical Education of the American Medical Association.

Catalogue giving full information, also entrance blanks, will be sent by applying to WM. S. ELKIN, A.B., M.D., Dean.

- - - - - UNIVERSITY OF TENNESSEE - - - - -

College of Medicine.—Course 4 yrs. of 36 wks. Class A Council on Medical Education A.M.A. Member Association of American Medical Colleges; "Registered" N.Y. Board of Regents. Requirements for admiss. 14 units high school plus 1 yr. college work, q. v.

College of Dentistry.—Course 3 yrs. of 35 wks. Member of National Association of Dental Faculties; "Registered" N. Y. Board of Regents. Requirements for admission: 14 units.

School of Pharmacy. Course 2 yrs. of 36 wks. Member of the American Conference of Pharmaceutical Faculties; "Registered" by N. Y. Board of Regents. Requirements for admission: 10 units of high school education.

Pre-Medical School.—Course 1 yr. of 36 wks. in Biology, Physics, Chemistry and a Modern Language. 1 yr. course at Memphis: 1 and 2 yr. courses at Knoxville. Requirements for admission: 14 units of high school education.

Session opens Sept. 23 for all except Col. of Dentistry which opens Oct. 1. For catalogs and other literature add. **E. F. Turner, Reg.- Bursar, Memphis.**

The Medico-Chirurgical College of Philadelphia
Department of Medicine

Located in America's Medical Center. A School which offers Peculiar Advantages for Completing a Course under the Standards of the American Medical Association.

Completion of standard four-year high school course, or its equivalent, plus one year of work of college grade in Physics, Chemistry, Biology and one modern language required for entrance. All credentials must be approved by Pennsylvania State Examiner under specifications of State laws. **A Pre-Medical Course** in Physics, Chemistry, Biology and German is given, complying with Pennsylvania State and American Medical Association requirements. **The Course in Medicine** comprises four graded sessions of eight months each. Among the special features are Individual Laboratory and Practical Work in well-equipped Laboratories and Hospital, Free Quizzes, Ward Classes limited in size, Systematic Clinical Conferences, Modified and Modern Seminar Methods. Abundant clinical material is supplied by the College Hospital, Philadelphia General Hospital (1500 beds), and the Municipal Hospital for Contagious Diseases. Also Department of Dentistry and a Department of Pharmacy and Chemistry. For information, etc., address SENECA EGBERT, M.D., Dean, 17th and Cherry Streets, Philadelphia, Pa.

Increased Opportunities for Post Graduate Medical Work in Chicago

THE CHICAGO POLICLINIC and THE CHICAGO POST GRADUATE SCHOOL have affiliated and are now able to offer greatly increased opportunities and facilities for systematic post graduate work. After May 1, 1915, these institutions will be conducted as a single school, one ticket admitting the holder to the joint work of both institutions, and the schedules of clinics and didactic instruction will be so arranged that anyone wishing to pursue special lines will find all day work in the specialty. Personal instruction will be given in all departments, including laboratory work and operative work on the cadaver. For details write either

THE CHICAGO POLICLINIC
M. L. Harris, Sec'y.
Dept. U. 219 W. Chicago Av.

THE POST-GRADUATE MEDICAL SCHOOL OF CHICAGO
Emil Ries, Sec'y.
Dept. 2400 S. Dearborn St.

MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA
CHARLESTON, S. C.

Schools of Medicine and Pharmacy

Owned and Controlled by the State

Eighty-Seventh Session Begins October 1st, 1915, and Ends June 1st, 1916

[illegible] and affiliated with the Roper Hospital, containing 218 beds, and whose clinical service is [illegible] and has a large and varied out-patient service, which is unsurpassed in the South, affording senior students in medicine and pharmacy exceptional opportunities for practical work.

The Laboratories in both schools are spacious and fully equipped.

[illegible] the oldest institutions of its kind, and the largest in the South.

Ten full-time teachers are employed in the laboratory branches.

[illegible] the Roper Hospital [illegible]

OSCAR W. SCHLEETER, Registrar

LUCAS AND CALHOUN STREETS — CHARLESTON, S. C.

University of Cincinnati

COLLEGE OF MEDICINE

(Ohio Medical College of Medicine) (A portion, endowed, University Medical College)

ENTRANCE REQUIREMENTS: State Board Certificate. 15 Grade High School work. Two years' accredited work in Physics, Chemistry (Inorganic and Organic), Biology and a College Language.

THE COLLEGE CONTROLS FOR TEACHING PURPOSES

[illegible] beds for general diseases in the Cincinnati General Hospital
[illegible] beds for contagious diseases in the Cincinnati General Hospital
[illegible] beds for tubercular patients in the Branch Hospital.

[illegible] Total

Students of the Senior Class will serve as clerks in the Wards of the New Cincinnati General Hospital (850 beds), built at a cost of $4,000,000.00. **College Dispensary Clinic of over 25,000 patients per annum. Summer pre-medical courses.** The New College of Medicine is to be [illegible] the **New Cincinnati General Hospital.** Full corps laboratory instructors. Small classes, individual instruction. Many [illegible] available in Cincinnati and other cities of the state. Course four years of 32 weeks each. Sessions open in last week of September. For illustrated information, address, THE DEAN, Clifton Ave., near Vine St., Cincinnati, Ohio.

Patronize our advertisers—mention the Journal when you write them

This is the second of a series of articles on the uses of Stanolax — tasteless, odorless, liquid paraffin.

The facts presented in this series of announcements are based on authoritative clinical data.

Made from American Petroleum

Correction—not merely temporary relief— of Constipation

Stanolax Liquid Paraffin, from the laboratories of the Standard Oil Company (Indiana), Chicago, U. S. A., is not one of those therapeutic agents which only temporarily relieve constipation, creating a habit and necessitating increased dosages. Its action is sole y that of a lubricant and protective agent. It is not absorbed or digested.

It does not excite peristaltic activity. It is absolutely non-irritant. Only the normal muscular activity of the intestines is brought into play. It is, therefore, administered in decreasing instead of increasing amounts.

Stanolax Liquid Paraffin

Manquat, A. (Revue de Therap., Paris, 1914, LXXXI, 181). The writer advises that liquid petrolatum be taken early in the morning, removed as far as possible from the first meal—a full hour before, by preference. Taken after eating, the substance is said to act less favorably, and also may cause a sensation of heaviness at the stomach.

Petrolatum Oil thus used is not absorbed, its action being purely physical and exerted upon the entire length of the intestinal canal. In this respect it differs from the vegetable oils, of which the larger part is digested and absorbed. Petrolatum Oil modifies the consistency of the intestinal contents, lubricates the bowels, thus facilitating the progress and expulsion of the stool. It also has a sedative action, allays intestinal spasm and delays toxic absorption. It is, therefore, especially indicated in cases of constipation accompanied by some degree of intestinal irritation and spasm.

A trial quantity and fully descriptive booklet will be sent gladly on request

STANDARD OIL COMPANY
(INDIANA)
CHICAGO, U. S. A.

(378)

UNIVERSITY OF VIRGINIA

Medical Department

UNIVERSITY, - VIRGINIA

The Entrance Requirements are the completion of a four-year high school course, and, in addition, a year of recognized college work in Chemistry, Biology, Physics and a reading knowledge of some modern language other than English.

The Prominent Features of the course are extensive laboratory instruction in the fundamental medical sciences and thorough practical training in the University Hospital, where students have many of the ADVANTAGES USUALLY GRANTED ONLY TO INTERNES.

FOR CATALOGUE, ADDRESS **HOWARD WINSTON, REGISTRAR**

UNIVERSITY OF ALABAMA
SCHOOL OF MEDICINE

MOBILE, ALABAMA.

Rated in Class A by the Council on Education of the American Medical Association.

Registered as a standard school of medicine by the New York State Educational Department.

Member of the Association of American Medical Colleges.

ENTRANCE REQUIREMENT: One year of college work in Chemistry, Physics, Biology and a modern language, in addition to the usual four year high school course.

Fees, $150.00 per session.

The DEPARTMENT OF PHARMACY offers a two-years course for the degree of Ph. G. Fees, $100.00 per session.

For copy of the annual announcement and any information, address

THE DEAN, SCHOOL OF MEDICINE, UNIVERSITY OF ALABAMA
St. Anthony and Lawrence Streets **Mobile, Alabama**

Patronize our advertisers—mention the Journal when you write them.

In Gonorrhea and its Sequelae

internal medication is frequently neglected, not because its importance is underrated, but because patients soon revolt against santal oil and balsam preparations or derivatives. No need to choose between these two evils—Employ:

Arhovin

Arhovin most efficiently fulfills all the functions of santal oil and balsam therapy, but does *not* { irritate the stomach or kidneys, / impart a tell-tale odor to the breath.

Information and literature from

Tins of 50 capsules, each 4 minims.
Dosage: 1 to 2 capsules, three to six times daily, after meals.

SCHERING & GLATZ, 150-152 Maiden Lane, New York.

Adequate Laboratory Service for Physicians

The Gradwohl Biological Laboratories have every known facility for accurate and prompt examinations of all kinds for physicians in need of laboratory help in their diagnosis.

Our Work Comprises:

Bacteriology **Pathology** **Serology**
Parasitology **Clinical Chemistry**

Complete Wassermann Test $5

Including a control test called the HECHT - WEINBERG TEST introduced into this country by us and proven to be the best control over the Wassermann, yet brought out.
AUTOGENOUS VACCINES- GONORRHEAL COMPLEMENT FIXATION TEST

FREE Sterile Containers for sending in blood.
Culture Tubes for making Autogenous Vaccines.
Literature on all These Tests, showing their various points of usefulness.

ASK FOR THEM

Correspond with us

Gradwohl Biological Laboratories

803 N. Garrison Ave. R. B. H. GRADWOHL, Director **St. Louis, Mo.**

The Plague of Summer---

INFANTILE DIARRHEA

Treatment by the Ingestion of the

Bulgarian Bacilli

Has Been Growing in Favor During the Last Five Years, Evidenced by the Constantly Increasing Sale of

Bulgara Tablets

H. W. & CO.

A Most Convenient and Reliable Form for Administering

BULGARIAN BACILLI

Samples and Literature Furnished Upon Request

The products of this laboratory are carried by the wholesale drug trade, generally, and by enterprising retail pharmacists all over the United States

The HYNSON, WESTCOTT & COMPANY

Pharmaceutical Laboratory BALTIMORE, MARYLAND

Armour's LABORATORY PRODUCTS

A uniform preparation is more dependable than a "catch-as-catch-can" product thrown together in small lots

Elixir of Enzymes

At this season the Alimentary tract must be considered. Elixir of Enzymes is recommended in stomachic and intestinal disorders. It is also a good vehicle for the iodids, bromids, etc.

Literature on Request

ARMOUR AND COMPANY

Chicago

SOUTHERN MEDICAL JOURNAL

JOURNAL OF THE SOUTHERN MEDICAL ASSOCIATION

PUBLISHED MONTHLY

Editorial and Business Offices: Birmingham, Alabama Publication Office: Nashville, Tennessee
Address all communications to Birmingham Office

Volume VIII JULY 1, 1915 Number 7

SURGERY, GYNECOLOGY, OBSTETRICS AND GENITO-URINARY DISEASES

THE CANCER PROBLEM.

By Joseph Colt Bloodgood,
Baltimore, Md.

About twenty-five per cent of the fully developed cancers have been cured by surgery. The evidence of the past shows that, left to themselves, people allow the local growth to become a fully developed cancer before they seek treatment.

Within this period almost fifty per cent of the cases become inoperable because of regional infiltration, or hopeless because of manifest remote metastasis.

Good surgery should promise one hundred per cent of cures in all cases in which the carcinoma is still a local growth.

The figures, fifty per cent inoperable and fifty per cent cured of the operable, giving about twenty-five per cent of cures, vary to a slight degree with cancer in different regions and with different types of cancer in the same region.

Up until five years ago the uniformity of the figures from the various great surgical clinics of the world was remarkable.

Undoubtedly, in some surgical clinics there has been observed a decreasing proportion of inoperable and hopeless cases, and an increasing number of operable cases, and an increasing per cent of permanent cures. But this seems to be due to earlier intervention rather than to better surgery.

Good surgery for cancer has about reached its limit. It is a question whether bad surgery ever cured a case.

This evidence is the key to the situation. Try to educate the public to get this good surgery at once, when it promises them the most.

Delay after the first warning is dangerous. Waiting, watching and hope with signs and symptoms of cancer is gambling with death.

Trifling with any treatment, except good surgery, is playing the same kind of losing game.

Members of the medical profession are often responsible for such procrastination and trials of doubtful methods of treatment.

We have sufficient evidence to convince both the profession and the public, but we do not seem to know how to present this evidence in such a way that they will believe it and act upon it.

Every human being will be warned, but the warnings of things that are not, and never may be, cancer, do not differ from the warnings of the things that are cancer.

Everyone should know about these first signs.

In the skin and mucous membranes the defect is palpable or visible—warts, moles, naevi, zones of keratosis, ulcers, any area of hypertrophy of the epidermis, or destruction. These

minute appreciable cases of disease are painless and not disfiguring. Cancer does not begin in every one, but no one can tell in which one. Therefore, if the area is properly excised by good surgery this possibility of cancer is removed.

The dangerous areas are the muco-cutaneous portion of the lip and the tongue.

All subcutaneous nodules must be considered as possibly malignant. The most dangerous are lumps in the breast and in the neck below the parotid gland (cancer of the bronchial cleft).

The message, therefore, to the people here is simplicity itself.

Irregularity in the periodicity of the menstrual flow, the appearance of a discharge between the periods, the reappearance after the beginning of the menopause, bleeding at unexpected moments, are all easily appreciable signs. Yet these occur so frequently without the development of cancer that most people are of the opinion that it is a "wolf-cry." Nevertheless the only hope in cancer of the uterus is to educate the woman to heed this cry at once and give her the additional information which will direct her to an expert examination, because in this stage the decision as to whether it is cancer or not is by no means a simple matter. This educated woman must get the best advice—otherwise she had better wait.

It seems to me here is a great opportunity for the woman physician.

Why should simple indigestion, slight recurrent attacks of colic, sudden changes from constipation to diarrhoea, or from normal to constipation, or vague discomfort within the abdomen, be looked upon as the warning of cancer? Thousands must experience such [illegible] Nevertheless the individual should at least be given the benefit of the information that if he wishes protection from cancer within the abdomen, he must answer these warnings by seeking from the medical profession not treatment first, but a thorough expert examination.

To the adult, such an examination would be valuable in addition to its investigation for a possible cancer. With a knowledge of his gastric secretion, blood pressure, kidney function and excreta, the good physician would in the majority of the cases not only be able to determine the presence or absence of cancer, but if all signs of cancer were absent the physician would be able to protect this individual from other serious diseases based upon these findings, especially the disease arteriosclerosis.

I am confident, if we can get the majority of people to be properly examined in this very early period of indigestion or abdominal discomfort, we will at least be able to decide with surety to them whether an operation is indicated or not. The surgical problem will not be discussed here. But it would appear not to be a very difficult one. Resection for operable lumps in the stomach and colon should have a slight, if any, mortality in good hands.

The discomfort of frequent micturition and the fear excited by the sight of blood in the urine and the agony of renal colic, as a rule brought patients with cancer of the kidney, bladder and prostate for treatment early in the disease. But until recently operation was delayed because of diagnostic errors and crudeness of the instruments of precision. But this day has passed.

In this domain of surgery there seems to be an exception to the general rule. Methods of diagnosis and treatment developed late in spite of the fact that many of the cases came for advice early. Nevertheless the history of surgery shows that in the early days nephrectomy for malignant disease of the kidney was more often possible than the complete operation for malignant disease of any other organ.

These facts are interesting in studying the evidence which we are trying to get for the development of the cancer problem.

We must not neglect education in relation to the bones and joints.

When an individual has a fracture or a

serious injury, he now usually gets the benefit of the X-rays, but if he has slight localized pain in the region of a joint, or some weakness of a group of muscles, or slight stiffness of the joints, if he seeks advice early, he is rather apt to get treatment instead of an examination. To reveal a sarcoma of the bone early, when there is the best hope of a cure with the least mutilation, the X-ray searchlight must be employed on the first slightest warning.

Examination first! In instructing the public and ourselves as to the warning which may not be cancer we must also, in addition to giving them this useful information, present it in such a way that they will act upon it, give them the courage as well as conviction. Many in the medical profession have the knowledge of what the warnings may mean, but often not the courage.

The first important step is a thorough examination.

From what we know of the early signs of cancer and the local growth in the early stage of cancer, or what precedes cancer, we should draw the greatest encouragement as to the probability of the per cent of cures possible in this early stage by good surgery. In the breast it should be at the worst eighty-six per cent, in local lesions of the skin over ninety-eight per cent, in lip and tongue over ninety per cent, in bone over seventy-five per cent. With the accumulating experience of each succeeding year with such early cases, the percentage of cures increases.

We are unable as yet to give the figures as to the uterus and stomach.

Unfortunate it is that pain is not an early symptom of cancer, but we must educate the people in such a way that this education will take the place of pain.

There is no doubt that pain brings the human being early for treatment, why should not proper information as to the significance of other less annoying but appreciable symptoms?

We should not fear cancer, because there is no doubt that among the many warned but a few are chosen for cancer victims.

At the present time there seems no substitute for good surgery, because we do not know all the etiological factors in cancer.

The majority recognize the congenital tumor. This can be removed, and in this sense the individual protected from malignant growth, which is possible.

Trauma and chronic irritation are insults which excite cell activity. Cancer may develop in these areas. If we can get the wound after an injury to heal properly, if we can remove the source of irritation, in this sense we can protect from cancer.

However, when the result of the local irritation has produced a definite local growth, complete removal in the majority of cases seems the simpler, safer method.

The factors over which we have control are, therefore, the duration of the disease and its treatment.

The diagnostic problems in this earlier stage of the disease will be discussed in a second paper.

CANCER AND PRE-CANCEROUS CONDITIONS.*

By M. H. Biggs, M.D., F. A. C. S.,
Surgeon to the Rutherford Hospital.
Rutherfordton, N. C.

The propaganda of education in the matter of cancer should not be left to committees appointed by national, sectional, state or other scientific bodies, but should be participated in by each of us and without regard to the general or special character of our work. It is not necessary that I should quote statistics to show you the incidence or increasing frequency of cancer. You are seeing it every day.

Accurate diagnosis is of supreme impor-

*Read before Rutherford County (N. C.) Medical Society, March, 1915.

tance and we should utilize every diagnostic aid at our command, including, when facilities are available, frozen sections at the time of operation. Laboratory blood-tests to exclude syphilis will often be necessary. Correct diagnosis presumes careful history-taking and physical examinations, and we should discourage the pernicious and not uncommon practice of what amounts to absent treatment. There may be times when the exigencies of the case warrant a physician in prescribing for a patient without having made a physical examination. Such cases must, however, be exceptional. When a physician is compelled or content to prescribe for a patient after a brief statement, either direct or transmitted by a messenger, he should insist that the paient submit to a physical examinaion at an early date thereafter. We make enough mistakes in diagnosis when we thoroughly and diligently exercise all our skill and acumen and have the assistance of laboratory and other scientific investigations. None of us should be satisfied with ordering treatment for what we surmise to be the trouble with a case described to us by a well-intentioned neighbor. We all recognize that this condition of affairs exists and are familiar with the evils attending it. We can all recall many instances in our own experience; how with patients un'er our own care a physical examination has disclosed a lesion differing radically from that which our hasty performed conclusion led us to believe existed; or again a case referred to us without examination, and the nature of which was considered to be obscure, has proven to be a pilonidal sinus, a pregnancy near term or some other condition easily permitting a definite diagnosis. When there is obstruction from a chronic gastric ulcer a diagnosis of indigestion is not good enough. A diagnosis of [illegible] is a cauliflower on the cervix.

[illegible] case in 3 per cent of patients having cancer of the breast, 9 per cent with cancer of the stomach, 14 per cent having cancer of the ovary and 20 per cent with cancer of the uterus.

Associate in your minds the two facts that over 90 per cent of cancers of the cervix are too extensive to admit of cure when seen by the surgeon and that in 20 per cent of these the family physician has not at any time made a physical examination, and you must admit that we of the profession are not sufficiently thorough and painstaking in our examinations Self-education must go on apace with or ahead of that to the laity.

We should all know the conditions that are liable to produce or develop into cancer and should realize that sound treatment of these conditions, as well as of early cancer, consists in complete removal. Nothing could better stamp a man as being thorough and conscientious than the statement once made to me by a general practitioner, that he considered it as much his duty to recognize surgical conditions and have them treated surgically as to recognize pneumonia and treat it medically.

Without any intention to discredit the value of radium or the Roentgen-ray, I am certainly warranted in the statement that the greatest hope of success in the prevention of cancer lies in extensive removal of early cancers and pre-cancerous conditions by operation. Most of the cancerous conditions that are cured by either the Roentgen-ray or radium are equally amenable to excision by the knife, and certainly removal by the latter method has an advantage in that it is more promptly effective in preventing and stopping dissemination. However, the point that I want to impress upon you is not so much what you do, but that you do it immediately. However applicable and valuable may be the policy of watchful waiting in international politics and big business, it has no place in the cancer problem. I assume that none of us will consent to the employment of measures other than those generally recognized as being efficient and regular, and that the prescriptions and salves of the

notorious female vendors and male quacks will be disbarred from our armamentarium, as their authors and compounders should be from the privileges of citizenship.

Perhaps I cannot do better than to quote Bloodgood, who has made a careful laboratory examination of several thousand such growths and critically analyzed the records of most of them. In speaking of tumors of the skin and mucous membranes, he says that in the beginning the tumor is always small and usually painless. "In my experience, when the lesion is completely removed at this stage there should be 100 per cent of cures. Few persons seek advice and few physicians advise radical excisions in this stage. In the majority of cases nothing is done. The period of quiescence varies between weeks and years. During this period some patients have been subjected to treatment, for instance, with the Roentgen-rays, radium, caustics or carbon-dioxide snow. From an investigation of a large amount of material I am convinced that, with one exception, the treatment which promises the greatest number of cures with the least mutilation is complete excision with the knife."

I will mention some of the less frequent sites where cancer occurs and then ask your particular attention to the three great cancer-bearing organs: breast, uterus and stomach. A consideration of some of the lesions of the intestinal tract would include: in the mouth: fissure, ulcer and growth of the lips, tongue and gums; suppuration and chronic irritation about the alveoli; leucoplakia of leucoma. These conditions must be treated if we are to cure them in their benign state and reduce the number of cancers in this region. It will hardly be too much to state that any fissure, sore or growth of the lips that does not heal readily should be viewed with suspicion of cancer and removed by operation for examination. By means of a V-shaped incision the operation can be done with practically no deformity and cancer in this location must be removed very early in order to insure success by simply excising the growth without the adjacent glands.

If we will routinely examine the mouth of each patient and give advice as to care and treatment, both medical and dental, we not only will be able to improve digestion, but will prevent the development of many cancers of the intestinal tract.

About one-half the cancers of the intestine as a whole occur in the rectum, the majority of the balance are in the colon, and a few in the small intestine. All benign tumors of the rectum should be completely removed with the base, particularly polyp, adenoma and fibroma, and stricture of the rectum should be viewed with suspicion and carefully watched for development of malignancy.

Not by any means every case showing mucus and blood in the stools is cancer, but every case having these symptoms should be examined for cancer. Our patients would be better off for a routine examination of both ends of their alimentary tract.

Cancer of the large bowel occurs at a younger age than in many other localities, is slow in progress, usually single, is apt to cause early obstruction and late metastasis and is not highly malignant, this part of the intestine having the least lymphatic supply. Therefore it is very amenable to surgical treatment.

While cancer of the pancreas is more or less rare, it is the most frequent growth found in that organ and is particularly liable to occur in early life. I have seen one case in a child of seven years.

Nearly 15 per cent of ovarian cysts are papillary or cancerous, and about 12 per cent of all tumors of the ovary are malignant. They may appear in previously existing tumors, but for the most part are primary.

Statistics show that when cancer of the thyroid gland can be diagnosed clinically a cure almost never is accomplished by operation. Nodular enlargements of the thyroid are the ones in which cancer is liable to be present or to develop, and in operating on these cases we should go wide of the nodules, or, preferably, remove an entire lobe.

Primary cancer of the urinary bladder usually occurs in a papilloma or on the site where

a papilloma has been removed. While most papillomata of this organ are histologically benign, many of them are malignant and they should be excised with a wide margin of healthy tissue. While there is little absolute proof that stone in the urinary bladder causes cancer, the conditions here are much akin to those in the gallbladder where stone is certainly often a precursor of cancer, and in both organs the two are found associated.

Cancer may develop in an hypertrophied prostate, or independently. A conservative estimate is that 5 per cent of enlarged prostate glands examined microscopically show some form of cancer. An excessive amount of pain and painful catheterization followed by free bleeding are helpful in the diagnosis, but the time to eradicate it is before the condition can be diagnosed clinically, as the case is generally hopeless when this stage is reached.

Cancer of the penis and foreskin is a lesion without early metastasis, and lymphatic involvement is limited for a long time to the inguinal group; the corpora cavernosa are not invaded until late, and it is, therefore, a very favorable condition for cure in the early stages if the inguinal glands are removed.

While cancer constitutes from 85 to 95 per cent of tumors of the liver, it is nearly always secondary to a cancer in another situation, particularly the alimentary system. It is practically always inoperable when discovered and is of value chiefly as a danger signal to us that there is cancer somewhere else in the system which is inoperable because of this proof of existing dissemination.

Four or five per cent of cases operated on for disease of the gall bladder and biliary ducts show cancer. The proportion of cancers in these structures in which cholelithiasis is present or has existed is estimated by various authors at 88 to 100 per cent. Hence, cholelithiasis is a typically precancerous condition.

I ask you to note the facts set out by Stacy (Mayo Clinic, 1912), that "American statistics in general show that in 38.6 per cent of the cases the disease is located in the stomach; 27.68 per cent in the uterus; 15.78 per cent in the breast, and 12.59 per cent in the liver. Thus it is demonstrated that about ninety-five per cent of all cancers are in these four organs. Over eighty-two per cent of cancers are situated in the stomach, uterus or breast.

Breast.—Speese states that abnormal involution occurs more frequently than any other affection of the breast except cancer. In his own series of analyses of breast diseases it occurred in 18 per cent. In cases which he studied in the laboratory it was associated with cancer in 26 per cent, while in a table of combined statistics compiled by him it was present in 15 per cent of cases with cancer.

The symptoms and signs of early cancer do not differ materially from benign lesions, except, perhaps, that benign growths, contrary to a rather general belief by the profession and the laity, are more often painful than early cancer. When we consider that over 80 per cent of tumors of the breast when seen are cancer and that in the early stages we are often unable to diagnose clinically the exact nature of the growth or to determine the time when malignant change begins, we are justified in advising the operative removal of every tumor of the breast, unless it be inoperable.

How shall we proceed in cases in which the diagnosis before operation is in doubt? The entire growth, with the overlying skin, should be completely excised and the growth sectioned and examined microscopically. If we have immediately at hand the service of a pathologist who is expert in this line we should obtain a report on frozen sections. At the same time we must make an ocular examination of the tumor for two reasons: First, that we will often be able to make the diagnosis, and second, that the more such examinations we make the greater will be our ability to make definite determinations.

The association of these two methods of examination has enabled many of our surgeon-pathologists to dispense with the microscope in establishing the nature of these lesions. If the growth is cancer and the axil-

lary glands are not palpably enlarged, a wide margin of healthy skin surrounding the tumor, the entire breast, the pectoral fascia and axillary glands and fat should be removed. If the axillary glands are palpably enlarged I approve of the removal of both pectoral muscles and any glands that may be found beneath the clavicle.

Bloodgood has again shown us that when the tumor is explored before there are clinical signs of cancer and the diagnosis of cancer made at this exploration is immediately followed by the complete operation, a cure will result in about eigthy per cent of cases. Also, that unless removal of the cancer alone is followed immediately by a complete operation there is not much prospect of a cure.

The matter then stands somewhat as follows: About thirty-three per cent of tumors of the breast are benign in the beginning. Practically every untreated tumor of the breast becomes malignant. Every operable tumor of the breast should be removed. If all tumors of the breast not clinically cancerous are explored, the nature of the growth determined, and, if malignant or suspicious of malignancy, a complete operation is made, a cure will result in over eigthy per cent. If some time intervenes between the exploration and complete operation in cancer, very few if any cures will result. If a complete operation is done after a diagnosis of cancer can be made clinically, and the case is not considered inoperable, from twenty to forty per cent will be cured.

Very advanced cases will be better off without our well intentioned surgical interference. If operation is resorted to in this class of cases our task in convincing cancer patients of our ability to relieve them is made more difficult by a high operative mortality or early recurrence; in short, by our demonstrated failures. Any evident metastases distant from the breast, such as lesions of the osseous system, preclude operation.

Judd has given us an admirable guide in the selection of cases unsuited to operation. He says: "If the supraclavicular glands be enlarged, it is our custom to excise one under local anesthesia, and if it proves to be malignant no operation is advised, since it is probable that by this time other and inaccessible regions are involved. If there be many skin nodules or if the integument be brawny and edematous, though the local lesion can be entirely removed, in all probability there are internal metastases or bone lesions and the condition is hopeless."

Uterus.—Prominent among precancerous conditions of the uterus may be mentioned cervical lacerations, polypi, and fibroids, and these conditions should receive surgical attention. Severe and extensive lacerations should be operated, preferably by amputation. Polypi should be excised, together with a wide margin of tissue at the basilar attachment. While excellent results in relief of bleeding and other symptoms and reduction in the size of fibromata uteri are secured by Roentgen-ray applications, this method should not supplant operative removal, one reason being subsequent development of cancer in a certain number of cases so treated.

While it has been generally considered that cancer is much more frequent in the cervix than in the body of the uterus, and the majority of statistics substantiate this view, recent reports from some large clinics show a reversal of these figures. This should warn us to be more watchful for disease of the fundus. Excessive or prolonged bleeding at or between the menstrual periods, irregular bleeding, appearance of leucorrhoea, will be early symptoms, and pain and loss of weight will appear in late cases. In younger patients the lesion will be found generally in the cervix. The appearance of a bloody discharge in a woman past the menopause will often be the first symptom to bring the patient to the physician. Any of these symptoms call for a careful examination, and we should take advantage of every opportunity to acquaint our patients with danger sings and by free discussion break down the barrier of false modesty that so often leads to fatal postponement in seeking the aid of a physician.

Perhaps we are inclined, from force of habit, to depend too much upon what we can see and feel in our examination of suspected cancer in this region. If there are present sufficient symptoms to cause us to investigate and we find no lesion of the cervix or cervical canal, a systematic curettage of the fundus should be done and microscopic examination of the removed material made as rapidly as is consistent with completeness and accuracy. This examination is emphasized for the reason that should microscopic evidence of malignancy be found, a complete operation should follow with the shortest possible interval, as the tendency of the curettage will be to disseminate the disease. Should the microscope not reveal cancer and symptoms persist, a hysterectomy should nevertheless be done. Actual removal of the uterus may be preceded by hysterotomy for absolute diagnosis, as advocated by Deaver, although it is improbable that any procedure short of hysterectomy will suffice to correct a condition for which we would feel justified in undertaking this operation.

In cases of known cancer, of course, a complete hysterectomy should be done. In advanced cases we must be governed by a number of factors. Because of the mental attitude of the laity toward surgery in the sections from which patients are received at the Rutherford Hospital, I neither advise nor perform an operation in this character of cases unless I am satisfied that I can remove all diseased structures, and I am convinced that by taking this stand greater good is accomplished.

Stomach.—Mayo says: "Cancer of the stomach is the most frequent and most hopeless form of cancer in the human body. Early operation affords the victim the only chance of cure." Eusterman states that of several hundred cases of resection for cancer of the [illegible] ulcer, and of those cancers so removed and [illegible] find the important precancerous condition of the stomach.

If we will recognize the fact that the largest proportion of dyspepsias are symptoms of some surgical intra-abdominal lesion and will search for the cause and remove it surgically, we wi cure a large percentage of dyspepsias without pills, pads or stomach tubes and will fores the development of many malignant conditions.

The diagnosis of gastric ulcer is not always easy, but with the mass of statistics now confronting us showing its prevalence, and the indubitable evidence that it is the chief cause of cancer of the stomach, we ought all to be more ready and willing to urge an exploratory operation when there is doubt or strong suspicion. The mortality of exploratory laparotomy and of early operations for the relief of both these conditions is so low, and the condition so hopeless when cancer can be diagnosed clinically, that we ought not to hesitate in an effort to afford early relief. It is not my desire to advocate unnecessary or too early resort to the knife, but if we are going to prevent and cure cancer of the stomach we must not wait for the formation of a palpable mass. We must take the rare chance of not finding at operation any trouble in the stomach, duodenum, gall bladder or appendix, and should not regret our mistake, as, in the long run, we will save many lives that we would sacrifice without this aid to diagnosis. I heartily agree with deQuervain, who says regarding courage in abdominal operations, "That surgeon is the bravest who does not fear occasionally to run the risk of a false diagnosis."

Let me ask you this question: If only 90 per cent of cancers of the stomach of sufficient severity to seek the surgeon have been examined by their family physician and only a small percentage of gastric ulcers become cancers, how many ulcers are overlooked by the attending physician?

[illegible] dead from "acute indigestion," a greater number of ruptured duodenal and gastric ulcers [illegible]

If you feel that operation in diagnosed or suspected gastric ulcer is attended with too great risk, do not forget that the unhealed ulcer subjects the patient to hemorrhage and perforation, both of which carry a high mortality, and that a persisting healed ulcer is a precancerous lesion.

How shall we proceed when we find a gastric ulcer at operation? Whether or not we do a gastro-enterostomy, we should certainly excise or destroy by cautery the ulcer when it is sufficiently accessible to do so completely and with safety, since, if left, it will be a constant menace to the patient. The increasing microscopic proof of the origin of cancer in an ulcer of the stomach certainly strengthens Rodman's argument for removal of the ulcer and the ulcer-bearing area.

Is it too Utopian to assume that if we remove those lesions that tend to develop into cancer in our patients of this generation, we will, by preventing its development in them, also prevent the transmission of a cancerous diathesis or perhaps of actual cancerous infection to succeeding generations?

CANCER OF THE BREAST.*

By W. L. Rodman, M.D.,
President American Medical Association.
Philadelphia, Pa.

Cancer of the mammary gland is second in frequency only to carcinoma of the stomach. When a clinical diagnosis of it can be made with certainty it is oftentimes too late for a radical cure to be effected, because it has ceased to be a strictly local condition, as all such lesions are in their incipiency, but instead has, through metastases, become a general and therefore necessarily lethal disease. A late diagnosis cannot be atoned for by a more extensive operation, as operative measures have already been carried to the farthest possible limit. Therefore our best endeavors should be enlisted in the direction of earlier diagnoses, or, better still, we should attack all lesions that are potentially malignant and remove them at a time when their hosts can safely, certainly and quickly be cured. The presence of so many laymen tonight would seem to make it necessary to emphasize what has long been known to surgeons and pathologists, that cancer is primarily strictly local. Further, there are many in the profession, a few in high authority, who still cling to a teaching which is as archaic as it is unfortunate. Moore, of London, demonstrated in 1867 that cancer begins always as a local disease. The evidence is clinical, microscopical, experimental and surgical, and no jury reviewing it can fail to find a prompt verdict. The clinical evidence alone is suggestive, indeed, well-nigh conclusive. Early in the disease a patient seems in every way to be in perfect health. They are well nourished, they have no pain, they eat, sleep, look and feel perfectly well. Could this be so if the disease were constitutional?

The microscopical evidence is conclusive as to the local nature of the affection; if one cuts through the center of a growth, places a section under the microscope, there will be seen countless epithelial cells pathognomonic of cancer. At the perphery of the tumor such cells become fewer in number, and, just beyond its edge there are few, or none at all. Can this mean but one thing—a local neoplasm?

Third, if a mouse is injected with cancer cells there will, in time, appear a small tumor at the identical spot where the injection or needle puncture was made. It grows slowly but steadily, and there is no tumor or swelling at any other place. The mouse seems as well as any others with which it may be placed. It eats, plays, sleeps and behaves in every way as other mice do. Later on secondary swellings or tumors appear over other parts of its body and simultaneously with them the

*Address: Southern Medical Association, Eighth Annual Meeting, Richmond, Va., Nov. 9-12, 1914.

animal loses its appetite, evidently has pain, becomes emaciated and finally dies. Plainly the disease is now constitutional, the blood and many solid tissues being involved.

But as weighty as the clinical, microscopical and experimental evidence is, the surgical is by far more convincing. If the small growth be excised, along with a fair amount of the tissue immediately adjacent thereto, so as to get beyond any outlying cancer cells, or, as a layman would say, "the roots," the wound made in so doing quickly heals and that is the end of the trouble. It never returns in loco or elsewhere. All depends upon the thoroughness of removal.

It would be interesting, if time allowed, to prove this incontestably by reviewing operative results from the time when operators were pessimistic and faint-hearted, therefore practicing only partial or incomplete removal, with the far better results secured at the present time when a judicious optimism prevails with all up-to-date surgeons who, accordingly, institute radical procedures and usually eradicate the disease. We could show how operative results have improved not only with each decennial or quinquennial period but, in fact, have improved year by year since Moore's epoch-making discovery. The forceful teachings of Moore and Banks of England, Billroth and Volkmann of Germany, and Goss, Halsted, Warren, Meyer and others in America have long since been accepted without question and should be thundered from the very housetops. Every patient with early cancer of the breast, every physician consulted on account of it, should know that prompt and radical surgical treatment offers almost certain relief. If it does not follow, somebody has blundered. Usually it will be the unfortunate host who has suffered so little inconvenience thereby as to think it trivial and refuse to seek advice. It may be the physician who prefers "to wait and see if it is malignant" before advising its removal; or, it may be the surgeon who performs an incomplete operation. Nevertheless, there was a time when a definite permanent cure would have been not only possible but next to certain. Should we not, therefore, pull together and not apart?

We have said that early diagnosis and prompt surgical intervention are both necessary. Can an early clinical diagnosis always be made? No, but usually it can be done and in doubtful instances there is a perfectly safe and accurate way of making a diagnosis. It is not by cutting into a growth, removing a part of it and submitting a section to a pathologist, who gives his report at the end of a fortnight. This plan is usually fatal and is to be condemned, as cancer cells are disseminated thereby and the local process made a more or less general one. The only rational procedure is to remove all of the tumor with a reasonable amount of surrounding tissues, and submit all to the pathologist, who is present, and who will furnish an immediate report after making frozen sections. This can be done in five minutes, and the action of the surgeon depends entirely upon the report of the pathologist, which is both accurate and safe.

Everyone familiar with pathologic conditions in the mammary gland knows that a vast majority of them are either malignant or potentially so. All should therefore be considered malignant until found to be benign. In patients who have reached the age of 40 or upwards the immense majority are malignant *ab initio*. But we have been too dogmatic in the past in declaring that cancer is an affection of middle or advanced life. Twenty per cent of carcinomata of the breast occur in women under 40, and I recently encountered it in a girl of 17. Moreover, when it does occur in young women, it is relatively more fatal than in older ones. It is therefore even more necessary to act promptly.

Why is it more fatal in the young? Because their lymphatic vessels are both more numerous and patent, hence a strictly local process soon becomes a general or disseminated one. In short, the lymphatic glands become involved at an earlier stage in the young, and, when such is the case, the chances

of a radical cure are about one-fourth as great as when they are not involved. Twenty-five per cent of the patients with axillary involvement are cured by operation; 80 per cent, or more, when there is no such involvement. Could a better reason be given for prompt action, as no one can foretell when the axillary glands may become involved? They are practically always infected within a twelvemonth after the local appearance of the growth in the breast and may be so much earlier. The younger the patient the sooner the involvement.

Difficult as it is clinically to distinguish with certainty between benign and malignant solid growths, the difficulty is greater when the two varieties of cysts are considered, and *greatest* when abnormal involutions and carcinoma are to be differentiated. The microscope, and it only, can be relied upon. The only safe plan is to get the consent of the patient to a complete operation, should it be necessary, the surgeon being governed absolutely by the report of the pathologist based upon frozen sections. Patients have a right to profit by their own pathology and it is the duty of the surgeon to have at hand a competent pathologist to render him prompt and accurate aid. In my judgment it is now impossible, perhaps always will be so, to make a diagnosis reasonably certain in any other way. For instance, in a careful analysis of 65 cases of abnormal involution or chronic cystic mastitis coming to operation at our hands, 14, or 21.5 per cent., had undergone undoubted carcinomatous degeneration when operated; in some the malignant changes were advanced, in others just beginning. Speece found 25 per cent of the patients operated at the clinics of the University of Pennsylvania showing carcinoma, and a recent report from one of the German clinics showed that 25 per cent of the abnormal involution cases there operated had already undergone malignant degeneration. We feel, therefore, that the percentages given by Warren (13) and Greenough and Simmons (10) are too low. But even if they are not, and the chances are only half as great, it would be unfair to the patient and unjust to the reputation of the surgeon to withhold any information that may be helpful. Partial operations in chronic cystic mastitis are rarely justified in those who have reached the age of 40, and should not be practiced at all, even in younger women, unless the microscopical report seems to make it safe. But even though malignant change *has not already begun,* who can say that it will not take place at some future time, with a condition present which is always admittedly potentially malignant? Reclus, one of the very first to study this disease, gave it the name of intra cystic epithelioma, showing that he recognized clearly enough its potentialities. It is, therefore, to be regretted that his first observations were for a long time forgotten. It were much better had the pathological name which he first suggested been generally adopted instead of calling the disease by the name of one who so accurately described it.

Cancer and abnormal involution are the two most common diseases of the breast, as will be seen by an analysis of 200 of my consecutive private cases:

	Number	Per cent
Carcinoma	83	41.5
Abnormal involution	67	33.5
Benign tumors	30	15
Papillary cyst adenomata	6	3
Tuberculosis	6	3
Sarcoma	5	2.5
Galactocele	3	1.5
	200	100

If we add the six cases of papillary cyst adenomata to the 67 of abnormal involution, we have 73 so-called benign cases and 83 malignant ones in a series of 200. Hence they are about equally common. The potential malignancy of papillary cyst adenomata is much greater than that of abnormal involution, as five of my six patients showed marked carcinomatous degeneration. In fact, I no longer consider this disease as benign. That it begins as such is true, perhaps, but it so quickly tends to assume a malignant phase that it is

safe only to consider it as malignant and to treat it in the most radical manner. The same is equally true of so-called Paget's disease. The eczema of the skin is the secondary manifestation of duct cancer and is due to the irritating discharge from within the ducts. The proof of this is found in the fact that the deeper we go the more marked evidence we have of malignancy. Whereas, if the superficial condition were the original one the reverse would be true. Then, Roger Williams, Raymond Johnson and others were fairly prompt to controvert the views of Sir James, but the latter's more commanding position and his forceful presentation of his case caused his view to be accepted as an ex-cathedra utterance.

How is cancer of the breast to be treated? Understanding as we now do, that it is strictly a local affection primarily, the answer should always, and without exception, be as direct and positive as language can make it. Free and early excision by the knife is the only thing to be considered, because one can never tell the extent of the disease until the lesion and surrounding tissues have been examined by sight, touch and the microscope so that the surgeon may *know* that his work has been rightly and thoroughly done. Hence the utter futility of caustics, radium, X-rays, etc., etc. There are conditions less pitiless and destructive in their nature where second and third best remedies may be used if, through a fancied dread of a surgical operation, the patient insists upon them. But, cancer is not one of them, and the medical man is recreant to his trust if he does not protest against a course which means certain disaster. The danger of an operation at this time is, at the most, one-half of 1 per cent, and if performed early nearly all will result in a permanent cure. Even when cancer has been present for a year the chances of success are at least equal. After more than a year's duration one-third, one-fourth or less will be cured, according to the extent of the growth, it location, age of the patient and other circumstances. Can more reasonably be expected of any treatment for a disease that will almost certainly prove lethal in thirty-six months without treatment? Cancer is curable, its existence in the breast, or other external organs, must, from its very nature be evident quite soon; therefore the responsibility for so many deaths, 1875-0 (12,000 annually from cancer of the breast in the United States), rests with the hesitating hosts or the equally dilatory physicians who are first consulted. It is no fault of the cancer, for there is visible evidence of its presence long before it has ceased to be a local and removable enemy. But both patient and physician may answer, "Yes, I knew that there was a tumor present, but did not suspect that it was serious." Lumps or tumors of the breast are always serious, and presumably malignant until the contrary is established, for we have shown that of 200 of my private patients taken consecutively, 161 were either malignant or potentially so. Add to them the six cases of tuberculosis, where it is almost as necessary to have a radical operation, the number is increased to 167. With such melancholy facts staring one in the face why will women and their family physicians continue to act as little children who play with fire? It passeth all understanding, but they do. Those who act promptly are as the wise, those who are tardy as the foolish virgins. Does not the drowning person catch at anything, even straws, before going down? But the victims of early cancer have a life-boat into which they may enter at any time, yet they sink. We must be patient with them for the same persons have been both blind and deaf to the progress of medicine in many other directions, as they have refused to allow their children to be vaccinated, denied them antitoxin when stricken with diphtheria, declined a timely operation in appendicitis and strangulated hernia, even refusing, though abundantly able to give them everything that wealth and supposed enlightenment offers, any medical treatment at all. Education, education, education must be given them, and it is our solemn and bounden duty to give it. They

may repel it and run after false gods once, but usually a single lesson will suffice.

We have spoken in a general way of the benefits of early operations and the hazards of delay. Let us now be more specific and speak of results in average cases, taking them as they present themselves to surgeons for operation, some of them coming early, some fairly early, others late, and others still very late. Private patients being more intelligent and having the ability to seek timely relief, give us much better results than are found in those whose lives are a constant struggle with adversity. Moreover, their appreciation of the dangers surrounding them keeps them in closer touch with their medical attendants and therefore permits far more accurate records to be kept concerning their after-history. Therefore we prefer to limit our statistics to private patients concerning whom we know everything, even though the aggregate will be less, rather than to include many others of whom we know little or nothing. Certainly, I maintain, accuracy is best subserved by so doing. Ward patients will not, as a rule, keep in touch with the surgeon after they leave the hospital and, as we are unable to give, even approximately, the condition of many, all are excluded.

Volkmann thought that if patients were free from recurrence at the end of three years after operation a radical cure could be affirmed. Until recently surgeons everywhere accepted the teachings of this great surgeon. It is even now customary to measure our results by this standard, though many believe, and I am one of them, that a five-year period is better, as an additional 5 per cent, possibly more, of recurrences will take place, or, to speak more accurately, be manifest between the three and five-year periods. It is questionable if recurrences actually take place after three years, but, as stated, they may become evident, though hitherto obscure. For all practical purposes it is a fair rule, if we admit the few exceptions. Of fifty private patients taken consecutively,* thirty-six are well three or more years after operation, thirteen are dead, one has a recurrence in the mediastinum, and is, of course, counted as lost. So fourteen are either dead or soon will be. In percentage 72 are well, 28 are dead. To show that I have not picked my cases, the woman living with a recurrence was operated on November 11, 1911, before a number of surgeons attending the Clinical Congress in Philadelphia, and the statement then was made that she had been refused operation by a prominent surgeon of this city on the ground that her case was inoperable. There has been no recurrence in loco, which shows that the growth in the breast was not inoperable. Mediastinal symptoms were not present until nearly three years after operation. Of these fifty cases there were seven with such extensively axillary involvement that I was compelled to deliberately resect the axillary vein to get rid of all apparent disease and make a thorough axillary dissection. In ten of them the sub-clavian triangle was explored (on account of high axillary involvement or peripherally lying tumors), though most of them were found to be without disease. I have never cured a patient with supra-clavicular involvement. I do not consider it as necessarily an inoperable condition as others (Johns Hopkins and Massachusetts General Hospitals) report undoubted instances of cure. It is a distinctly unfavorable omen, however, and was universally considered as a positive bar-

*Three cases of acute carcinomatous mastitis are excluded, as they were all operated upon solely to relieve pain and for psychological reasons. One in addition to having much pain was pregnant, and both she and her husband, a medical man, insisted upon an operation on account of the child. She was prematurely delivered at the seventh month, and died shortly afterwards. The other two lived four months and thirteen months respectively. In acute carcinomatous mastitis the carcinoma process is disseminated throughout the gland, not a discreet and local process, therefore operation, so far as my observation goes, is useless. I have known it to be fatal, in a case treated solely by radium, in three months, to a day, from its inception. A photograph of this patient is here shown. It was taken six weeks after the trouble was first noticed, and at this time the breast was adherent to the costal wall. The skin covering the breast was red and not unlike erysipelas. Before death it was as purple as an egg plant.

rier to operation until Halsted proved by his results that it was not. Two of my patients had ulcerating tumors and one of them had been denied operation by another surgeon. She lived more than six years without the slightest evidence of recurrence, dying of paralysis at the age of 72.

A resume of the 36 living patients shows that

1 was operated in 1899 (Jan.).
2 in 1900 (May and Dec.).
1 in 1901 (Oct.).
3 in 1904 (July, Sept., Dec.).
4 in 1905 (2 Sept. 2 Nov.).
6 in 1906 (2 Feb., 1 July, 3 Sept.).
1 in 1907 (Dec.).
4 in 1908 (March, May, Oct., Nov.).
2 in 1909 (April).
6 in. 1910 (Jan., April, June, July, Nov., Dec.).
6 in 1911 (1 Jan., 2 April, 2 Oct., 1 Nov.).

There are 7 who have passed the ten-year period, 24 who have gone five years, 30 four years and 36 three years. In nearly all of them the functional use of the arm is as good as it ever was. A few of the earlier ones who were grafted show slight improvement, due to a contraction of the skin. In none of those operated on since 1906, by the method I now employ, is there either impairment of function or oedema. Loss of both pectoral muscles does not in the least curtail the usefulness of the arm.

None of the cured patients operated prior to 1909 (24) were given a course of X-ray treatment subsequent to operation, it being reserved for those with recurrences. Latterly I have secured through the cooperation of my colleague, Dr. Pfahler, results which warrant its employment in the more advanced cases. In those of average severity, where I feel satisfied as to the thoroughness of removal, it is not employed at all. In several very advanced cases I have been inclined to give at least a part of the credit to X-ray treatment subsequent to operation. One such patient from Atlantic City was operated upon in July, 1910. I did not believe that she would live a year. She, at my request, was re-examined, along with nearly all of the cases here reported, on November 18, 1914, and was examined also by a number of visiting members of the American College of Surgeons. She is absolutely well in every way.

Since March, 1913, at least three patients operated upon were so advanced that the X-rays were sent into the wounds in great concentration before they were sutured, as no hope of a radical cure was entertained in any of them. One, with a very large sarcoma, died in six months.

One, a case of Paget's disease (photograph), with one of the very worst axillas I have ever encountered, showed a recurrence in the neck in thirteen months. The neck had been explored at the time of operation with negative result. This woman, who is alert and of quick perception, assures me that she consulted me two weeks after she noticed the inflammation and ulceration around the areola and nipple. She could not have suffered from cancer less than eighteen months to two years, and this statement was made in my notes taken the day she came to me from Wellsboro for operation. She had no pain or other symptom and believed herself to be well until the trouble with the nipple and areola began, and it was for *this* that she first consulted Dr. Longwell, and *not* for the cause of it. It proves that the affection of the nipple and areola is a secondary or terminal process, as I have always maintained.

The third case to receive X-rays into the wound before suturing is apparently well in every way more than thirteen months after operation. She was also examined on November 18 by a number of visiting surgeons and myself.

But, grateful as I am for its, or any, assistance in combatting so protean an affection as cancer, I wish to state most positively that it has no place in the treatment of cancer of the breast *until after operation*. It will cure epitheliomata of the skin and superficial sarcomata which may even be inoperable. This I have witnessed more than once. But I have yet to see a single patient with mammary carcinoma passing the three-year limit where

all the credit could fairly be given to X-rays. It is, in my judgment and experience, much better than radium, as the only two patients I have submitted to the latter treatment were unquestionably made worse by it and quickly succumbed. This was their opinion and it is mine.

To treat an operable neoplasm of the mammary gland by either radium or X-rays has no justification whatsoever pathological or clinical. We have heard entirely too much of radium and its marvelous cures and have had too little verification of its beneficent powers. Whatever it will do, X-rays will do better. The latter is available to poor and rich alike, while only the wealthy can afford to travel in their private cars across the continent chasing this *ignis fatuus*. The German surgeons have tried it out, abandoned its use, and warned the public against it. The storm in America has about passed, the air has been clarified, the damage estimated, and, like lightning, it has only struck in a few high places.

THE OPERATIVE TREATMENT OF CHRONIC INTESTINAL STASIS.*

By William Seaman Bainbridge, A.M., Sc.D., M.D., C.M.,
New York, N. Y.

The trend of the times in the matter of house-building has been steadily toward improvement in every detail. Now, even in the rural districts, the housewife is relieved of many of her erstwhile domestic burdens by the sanitary house-builder, or by the architect who is an adherent of modern efficiency methods. As it is with the home and the business house, so it is with the sanitation of the country, the village and the city. The fact that the laws of sanitary science have penetrated even the jungle and the swamp is proved by the history of the wonderful campaigns which have been waged for the eradication of yellow fever, malarial fever and certain other scourges which are known as filth diseases.

The question may be asked whether, coincidental with the perfection of sanitary science as applied to housebuilding and to the ordering of cities and country, there has been developed a general system of sanitation for the human body, notable alike in inhabitants of country, village and city. This, apparently, is not the case. The complexities of civilization seem to have made for detriment rather than improvement in human plumbing, or rather, to the keeping in good condition by the individual, of the system of sanitation with which nature has equipped the human species. All the accessory factors which make for perfect body-sanitation—skin, teeth, salivary glands—are more or less defective in civilized man, and their functions are more or less impaired. The exceptions rather prove the rule. As a consequence, more work, or work of an unaccustomed quality, is thrown upon the essential factors—the stomach and the intestines.

If, perchance, the stomach is not fully equal to the superimposed task, which is often the case in consequence of the many abuses to which it is subjected, it sends the food on into the intestines improperly prepared. Or perhaps the muscles of the stomach, overworked, are not strong enough to expel the food, so that it is left to ferment and decay, a further impairment of the drainage system takes place and a condition of stasis supervenes in this vital portion of the sanitary plant.

Worst of all, however, is the crippling of that portion of the drainage system which we know as the intestines, both large and small. This tortuous canal, with its approximate length of six times that of the body, furnishes fruitful soil for abnormalities resulting, many believe, from the change of posture from the all-four position of lower animals to the erect position of man.

This change of posture, according to some students of comparative and developmental

*Epitome of the Jerome Cochran Oration on Surgery, before the Medical Association of Alabama, Birmingham, April 20-24, 1915.

anatomy, has called for a reconstruction of the mechanical principles governing body-drainage. Portions of the alimentary tract which, in lower animals, were essential to or at least important in the processes of digestion, assimilation and elimination, are now considered by some investigators to be rudimentary, nonfunctioning, or, if functioning, not a necessary part of the great plumbing system by which the perfect sanitation of the body is maintained.

Thus, in 1901, Sir W. Arbuthnot Lane, of London, for the first time having reached the conclusion that the human cecum and ascending colon, acting as a "cesspool," might safely be eliminated, suited the action to the theory by excluding the large intestine from the drainage scheme, performing in certain cases his now justly celebrated "short circuit" operation (ileo-colostomy), and later his operation of ileo-colostomy with colectomy. In substantiation of his views and in vindication of his surgical procedures, Lane has elaborated the mechanical principles upon which he believes the human plumbing system operates, and has directed attention to the important part played in the life history of the individual by a delay in the passage of material along this great drainage canal, the alimentary tract.

According to Lane's theory the mechanical relations of the alimentary tract, particularly of the large bowel, are changed in consequence of the assumption by man of the erect posture, and the results of these changes are augmented by the sedentary habits of civilized man. In consequence of the upright position there is a tendency to general and persistent enteroptosis, particularly marked with reference to the large bowel. Nature attempts to relieve the strain of this persistent enteroptosis, and the dragging of the displaced bowel is offset, as it were, through hypertrophy of its membranous supports—"the crystallizations of lines of force," or "the crystallizations of resistance." These supports are variously called "bands," "folds," "veils," and "membranes."

Lane has shown that these adventitious intra-abdominal structures were formed by nature, in the first instance, for the purpose of offsetting the newly-acquired visceroptotic tendency, and of facilitating drainage. In consequence, however, of an unequal support in different portions of the canal, these structures may and do become the cause of very material obstruction as the result of the kinking of the gut to which they give rise. This obstruction occurs most frequently at certain points of predilection, as given below:

(1) In the third part of the duodenum, at the duodeno-jejunal junction. (2) At different points along the terminal ileum. (3) In the ileo-cecal region, including the appendix. (4) In the region of the hepatic flexure and the first part of the transverse colon. (5) At the splenic flexure. (6) At the sigmoid loop. (7) In the pelvic colon or rectum.

As an immediate result of the kinking of the gut by these structures there is a slowing in the passage of the contents, varying in degree according to the location of the kink, the severity of the interference and various other factors. To the immediate condition resulting from this interference Lane has applied the term "chronic intestinal stasis."

Referring to the idea, maintained by some, that he is investing "simple constipation" with new importance and significance, Lane calls attention to the fact that constipation, which is generally considered to involve the large bowel, particularly in its lower part, may exist to a marked degree without overtaxing the organs of digestion, assimilation and elimination to such an extent as to give rise to the symptomatology of autointoxication. With chronic intestinal stasis, however, far-reaching results may ensue. The delay in the passage of the contents of the canal results in the absorption into the circulation of more toxic matter than the organs of conversion and elimination can deal with. "The excess of these poisons," according to Lane, "circulating through the body cannot be dealt with effectually by those organs whose business it is to render them as innocuous as possible. They produce degeneration in every tissue, and a very definite and unmistakable series of symp-

toms results." Every tissue of the body is affected to a greater or less extent, giving rise to far-reaching evil effects.

From a study of Lane's work and his cases, both by personal observation and by reading his published reports, and from my own experience and that of others, I have come to classify my cases of chronic intestinal statsis, according to treatment, under three general groups:

First Group—Beginning cases, in which, by preventive measures, a definite condition of stasis may be obviated.

Mid Group—Mild cases, in which, by preventive measures and by moderate surgical procedures, such as cutting bands, replacing hollow organs, changing angles, etc., the severer degrees of stasis are forestalled and the necessity of more radical surgical measures may be obviated.

End Group—Advanced cases, in which, despite preventive treatment, or because of inefficient treatment, the condition progresses to the degree of stasis which requires the more radical surgical procedures, such as short-circuiting (ileo-colostomy), or ileo-colostomy with colectomy.

The hygienic, dietetic and supportive measures which are applicable to the treatment of patients of the *first group* are equally applicable in the after-care of patients of the other two groups. An essential part of this treatment is a properly fitted abdominal belt. Any belt which subserves the purpose may be used as a temporary support to aid nature in restoring tone. The mere matter of ordering a belt, however, is not sufficient—the belt must be adapted to the individual patient, and must be properly applied at all times, as may be demonstrated by X-ray examination.

In the treatment of the *mid group* cases it is necessady to perform laparotomy for the purpose of applying milder the surgical procedures mentioned. In cutting bands it is important to remember that bands should be cut transversely and sewed up longitudinally, thus giving greater play to the constricted portion of gut. Great care should be exercised, too, to prevent the leaving of any raw surfaces or rough edges, which would prove fruitful soil for the formation of adhesions. If necessary the appendix is removed.

The part played by the cecum in the production of chronic intestinal stasis has called forth much discussion and various methods of dealing with this particular part of the drainage canal, by anchoring, plicating or otherwise endeavoring to restore it to normal proportions and function. I have sometimes found it advantageous to employ the plication method, as illustrated in Figs. 1, 2 and 3. I

Fig. 1.—Condition found at operation: Much enlarged mobile cecum; ileal kink.

Fig. 2.—Band severed transversely, leaving raw surface to be covered. Kink relieved.

use interrupted stitches instead of the continuous sutures, as employed by Blake and others. The plication is extended well up into the

flank, to a point where the gut is fairly well fastened to the abdominal wall. It is yet to be determined whether this, or any of the methods devised for the prevention of stasis in the cecum, will stand the test of time, and

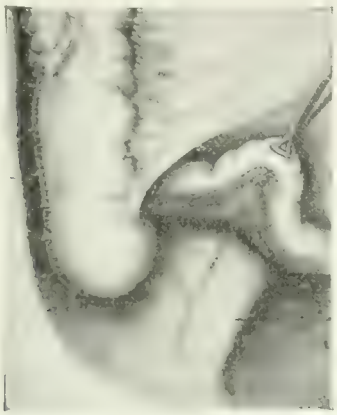


Fig. 3.—Raw surface covered with flaps of peritoneum by interrupted stitches. Cecum and ascending colon plicated and fixed to abdominal wall.

whether, after all, the cecum cases will not have to be from the mid group category, in which no attempt is made at removal, to the end group, in which removal of some portion or the whole of the large bowel, or at least diverting the course of the drainage, is the object to be attained.

The covering over of raw surfaces and the prevention of adhesions is of the utmost importance in the correction of the conditions which cause chronic intestinal stasis. Figs. 4

Fig. 4 (from British Medical Journal, November 1, 1913).—A, Pericolic membrane; B, Inflammatory mass; C, D, Appendix; Ribbon behind cecum; C, Ileo-pelvic band.

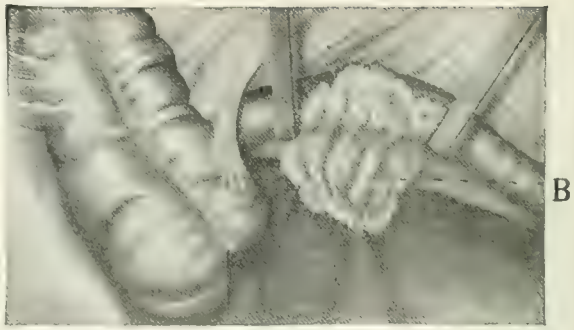


Fig. 5.—Conditions in Fig. 4 corrected. A. Appendix removed; B. Piece of detached omentum covering area of band severed, impossible to cover by suturing.

and 5 illustrate the severing of broad bands, and the covering over of the remaining raw surfaces with a piece of detached omentum. Figs. 6 and 7 show the method of covering the

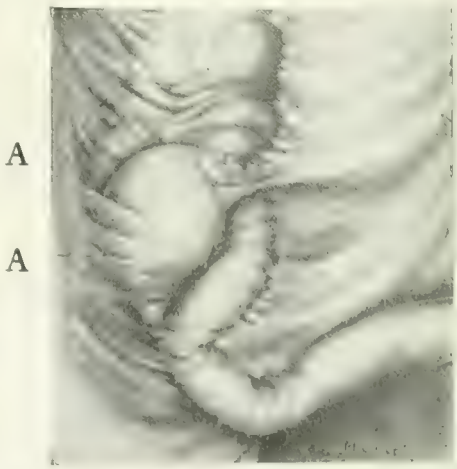


Fig. 6.—Inflammatory adhesions following appendiceas abscess; twisting of cecum and obstruction of ileum.

raw surfaces by means of omentum not detached, but simply sutured in place over the area to be covered.

In the *end group* cases two methods are generally employed, according to the individual cases, viz., ileo-colostomy (Lane's "short-circuiting" operation) and ileo-colostomy with colectomy.

The care of the patient before, during and after operation is the same for ileo-colostomy

and for colectomy. It is of the utmost importance in either case. The hygienic, dietetic and supportive measures which are applicable

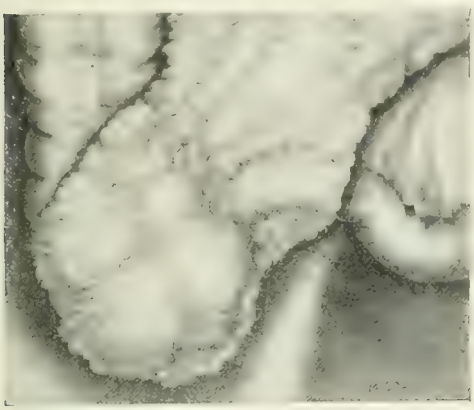


Fig. 7.—Condition in Fig. 6 corrected. Raw surfaces covered by omental flap still connected with omentum.

in the management of patients of the first group, and with which I have dealt fully elsewhere,* are equally applicable in the after-care of patients of the other two groups.

The immediate preparation of the patient for operation is commenced two days before. An ounce of castor oil is given, followed by a soap enema night and morning for two days. During this time the patient is kept on a strict liquid diet. A half-ounce of brandy every four hours may be given to weak and delicate patients. The entire abdomen is subjected to the most careful sterilization. An hour before operation an injection of morphia, 1-6 gr., with atropin sulphate, 1-50 gr., is administered, followed by the open ether method of anesthesia.

When the patient is anesthetized, infusion needles are inserted subcutaneously into the axillae, previously painted with iodin, and normal saline solution is administered throughout the operation, usually from four to six pints being absorbed. For this purpose Lane's hypodermoclysis apparatus is employed. A rectal tube is inserted during the operation, after the anastomosis is made and before the abdominal wall is closed. When the patient is returned to bed this tube, which is attached in place near the anal outlet, is connected with a long piece of rubber tubing, and drains into a receptacle at the side of the bed. It remains in for six days. The average drainage is about fourteen to twenty ounces a day.

When completely recovered from the anesthetic the patient is placed in the true Fowler position, practically sitting upright in bed. For the first two days after operation the pulse is taken every hour and the temperature every four hours. The sutures are removed, as a rule, on the fourteenth day, and a gauze dressing applied. For the first two days the patient is given only water, egg albumen, beef juice, plasmon and brandy, for the next four days, going in gradually to jelly and custards. During convalescence nothing heavier than fish and chicken is given. Pure liquid paraffin (Russian Mineral Oil) one ounce or less three times a day, for as long as is necessary, is given after the third day. It is better to add a little essence of orange or lemon, or the desired aromatic, is given. Milk of magnesia may be used as needed, if the Russian Mineral Oil is not borne well, or until the patient sits up. The patient is usually allowed on a couch at the end of the fourth week and is discharged at the end of the sixth week.

Technic of Ileo-colostomy (Short Circuit)—The incision, to the left of the median line, divides both layers of the rectus, and extends from about two inches above the umbilicus nearly to the symphysis pubis. The peritoneum divided, and the parts properly protected by sterile cloths, a thorough examination is made of abdominal contents. Ileo-colostomy having been determined upon as the result of this examination, the ileum is grasped by two compression forceps, which are placed transversely across it and as close together as possible. The bowel between the forceps is cut through with the cautery. As a rule the point at which the ileum is cut through is within a few inches of its termination, though this varies with circumstances. A suture is threaded through the distal end of

*Bainbridge—Chronic Intestinal Stasis. Types of Cases. Preventive and Medical Treatment Outlined.—Woman's Medical Journal, January, 1914.

the ileum, including the forceps in its several loops. The forceps are then removed, and the thread tightened and knotted, this end of the ileum being thus secured. The sutured end is next invaginated. The pelvic colon is now drawn up into the incision, emptied of its contents and grasped between the blades of Lane's gastro-enterostomy forceps. The proximal end of the ileum is emptied of its contents, with a very light pair of compression forceps it is held in position against the part of the colon at which the juncture is to be made. An incision along the length of the colon is made, of a size corresponding to the calibre of the ileum. The ends of the ileal aperture and of the aperture in the colon are secured by toothed forceps. The adjacent margins of the apertures in ileum and colon are now securely united by means of a buttonhole suture. The controlling forceps are removed, the ileo-colostomy junction reinforced by one or two additional rows of sutures which perforate the peritoneal and muscular coats, the small intestines are drawn upwards out of the pelvis, and are held in this position while the free surfaces of the pelvic mesentery are attached to the free surface of the mesentery of the ileum by a buttonhole suture. An esophageal tube is inserted into the anus and passed along the rectum, its passage being facilitated by injecting paraffin into the tube by means of a Higginson syringe. The tube is passed through the opening in the colon, and for about twelve inches along the ileum. It is secured in the anal region in the male and to the [illegible] in the female. This is connected to the tubing and vessel referred to in the after-care of the patient.

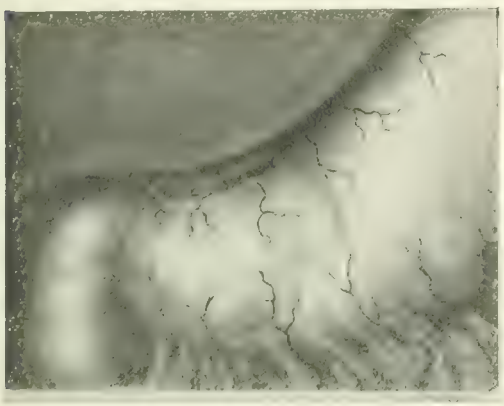
Technic of Colectomy.—An incision of the same kind but a little longer than the one employed for ileo-colostomy alone is made when colectomy is to be performed. The importance of making a free incision [illegible] emphasized. It is essential that a full view of the abdominal cavity be obtainable. Ileo-colostomy (according to the technic just described) having been performed on a previous occasion, or as a preliminary step to the present operation, the large bowel is now separated one and a half to two inches above the ileo-colic junction. This is accomplished as in the case of the ileum, by grasping the bowel between two forceps and dividing between with the cautery. The meso-colon from the cecum on is tied off in sections, and the large bowel, thus exsected, is removed from the abdominal cavity. The cut end of the pelvic colon is closed with a running suture, and is buried, about on a level with the upper limit of the ileo-colostomy, by means of an encircling suture which includes the peritoneal and muscular coats. In order to prevent subsequent sacculation, the cut end may be closed and sutured to fascia of pelvic wall. The esophageal tube is passed in the same manner as in ileo-colostomy, and the after-care of the patient is the same.

While these surgical procedures and the various methods of intervention which have been proposed may not be ideal, the condition of chronic intestinal stasis, as we now understand its far-reaching import, certainly calls for radical intervention in some cases, and the methods described seem to be the best suggested up to the present moment. With continued study of these cases and their treatment undoubtedly the ideal method will be evolved.

Furthermore, many other knotty problems in medicine and surgery may be cleared up through the study of chronic intestinal stasis. We are not all in accord with all Lane's views concerning the association of other disease with chronic intestinal stasis from an etiological point of view, but it cannot be definitely stated, at this stage of the evolution of the entire subject, that he is either right or wrong. In my own experience some remarkable surprises have been encountered, which have pointed the way to further investigation. For example, in a number of cases of chronic intestinal stasis in subjects who are epileptic, operation for stasis has appeared to cause complete cessation or marked decrease in frequency and severity of the attacks of epilepsy. It is too early yet to forecast the ultimate outcome of such cases, but there is reason to be-

lieve that in some cases of epilepsy of other than central origin amelioration if not cure may be obtained by the permanent cure of chronic intestinal stasis. Melancholia, lumps in the breast, albumin and casts in urine, and other untoward conditions, have disappeared after relief of stasis.

Lane has long contended that cancer, among other diseases, is associated etiologically with chronic intestinal stasis. Such a contention is manifestly difficult of proof, but should nevertheless be given careful consideration. Fig. 8 illustrates a case in which



A

Fig. 8.—A. Carcinoma of stomach: B. Distended duodenum, resulting from kink at duodeno jejunal junction.

there is strong presumptive reason for thinking that there may be some causative factors in common between the two conditions, or that one is superimposed upon the other as a result thereof.

THE PATHOLOGY AND TREATMENT OF CUTANEOUS CANCER.*

By H. H. Hazen, M.D.,
Professor of Dermatology, Georgetown University; Professor of Dermatology, Howard University.
Washington, D. C.

The statistics of the American Dermatological Association as given by Pollitzer[1] show that nearly 2 per cent of all dermatoses are cancerous in nature. Therefore, the disease is frequent enough, as well as serious enough, to merit careful consideration.

According to Unna,[2] the first division of carcinomata of the skin was made by Hannover[3] in 1852, when he made use of the term "flat" and "infiltrating," a division that was brought into popularity in the great work of Thiersch[4] in 1865. To some extent Thiersch, and to an even greater extent some subsequent writers, attempted to classify skin cancers according to the tissues from which they sprang. Unfortunately for this plan the early advocates of it were not good pathologists, and consequently fell into many evil traps; for example, all tubular carcinomata were supposed to spring from sebaceous glands. As a result of such errors the earlier cutaneous pathologists, headed by Unna, totally overthrew all attempts at such a classification.

In recent years, however, the brilliant work of Krompecher,[5] in Germany, so ably seconded by Bloodgood,[6] in America, has definitely established that carcinomata may originate, not only from the different epithelial structures of the skin, but also from the different layers of these structures. They have gone even further and shown that in rapidity of growth and in the power of metastasizing these tumors markedly differ one from the other.

There are, of course, the following epithelial structures from which cancers may arise:

(1) The surface epithelium.
(2) The hair follicles.
(3) The sebaceous glands.
(4) The sweat glands.
(5) The sweat ducts.
(6) Congenitally displaced epithelial structures.

Three varieties of cancer may spring from the surface epithelium, those originating in the prickle cells, those originating in the basal cells, and those originating in the cuboidal cells. Tumors originating from the hair follicles, in the light of our present knowledge, spring from the basal cells alone. Concerning the glandular elements it is possible that

*Read in Section on Surgery, Southern Medical Association, Eighth Annual Meeting, Richmond, Va., Nov. 9-12, 1914.

the origin might be from either the basal cells or from the more highly differentiated secreting cells, but with our present technique for histological examination this question is not as yet definitely settled. The naevo-carcinomata (or sarcomata) spring from misplaced tissue existing in various types of naevi. A consideration of these facts will give the following classification, which is based not only upon the correct pathology of the tumor, but upon its clinical course as well:

(1) Malignant epithelial warts.
  (a) Prickle celled.
  (b) Basal celled.
(2) Basocelled carcinomata.
  (a) Flat rodent ulcer.
  (b) Nodular carcinoma.
  (c) Rolled edge carcinoma.
  (d) Depressed scar-like carcinoma.
  (e) Morphoea-like carcinoma.
  (f) Fungating carcinoma.
  (g) Deep ulcerating carcinoma.
(3) Cubo-celled carcinomata.
  (a) Fungous carcinoma.
  (b) Ulcerating carcinoma.
(4) Prickle celled carcinomata.
  (a) Ulcerating.
  (b) Fungous.
(5) Carcinoma of hair follicles.
(6) Carcinoma of sweat glands.
(7) Carcinoma of sebaceous glands.
(8) Naevo-carcinomata.
(9) Paget's disease.
(10) Carcinoma en cuirasse.

1. Malignant epithelial warts, as already indicated, are of two varieties, the basal celled and the prickle celled. The basal celled are so rare as to be practically negligible. Bloodgood, in his first series of 468 cases of epithelial growths, saw 24 instances of malignant warts. They were most commonly situated upon the lips or the face, but also were found upon other parts of the body. They usually presented a more or less pedunculated appearance, but the most characteristic feature was the lack of induration at the base. These growths do not give rise to metastases, hence only a complete local removal is sufficient to effect a cure, even when the tumors are situated upon the lips. However, when they are situated upon the tongue or penis it might be safer to remove the draining glands, although this point is not definitely settled. If there is induration beyond the pedicle, and if this is of a cancerous and not of an inflammatory nature, as sometimes occur, the neighboring glands should be removed.

2. The basal celled carcinomata are the growths most frequently encountered by the dermatologists and general practitioners. They are most apt to be seated upon the face, especially around the eyelids and naso-labial folds. By many of the English writers they are spoken of as "Jacob's ulcers," by the early surgeons as "cancroids," and by the majority of later surgeons and dermatologists as "rodent ulcers." Although they vary much in clinical appearance according to their inherent power of growth and the resistance of the invaded tissue, still all have certain general characteristics. The most important of these features is the fact that they never metastasize. They grow rather slowly, and as a rule are superficial at the start. However, it seems fairly certain, according to the work of Petersen[7] and others, that they may have a multicentric origin. The fact that they are so frequently multiple would seem to confirm this possibility, also the fact that when the early ones recur after operative removal they practically always recur in the neighboring skin and not in the depths of the wound. Histologically it is found that they arise from the basal layer of the rete, and that the cancer cells retain many of the characteristics of the parent cells. They stain rather deeply with the basic dyes, such as haematoxylin, and never form epithelial whorls or pearls. In early cases they form solid masses, the "carcinoma basocellulae solidum" of Krompecher and Bloodgood. Later cystic degeneration may occur, the cells may arrange themselves in long, finger-like processes, or the cells may become scattered in small foci, the "carcinoma stellatum."

The naked eye appearance of these growths is most important, for, if the surgeon is a good gross pathologist, he can usually decide

while operating as to the nature of the growth, and not be forced to wait for a frozen section, which in doubtful cases may be confusing. Characteristic of these baso-celled tumors is the superficial character of the infiltration, and the small size of the cancerous acini, usually looking like excessively fine white threads.

The important things to remember about the growth of these tumors is that they may have a multicentric origin, thus requiring an extensive local removal, and that they never metastasize, thus requiring a local removal only. Personally I feel that surgical removal is the correct procedure in the vast majority of cases. This may be done with the knife, with the cautery, or in very rare cases with the curette and caustic. Personally I prefer to use the knife and then to cauterize the edges with the acid nitrate of mercury after the method of Sherwell.[8] In early cases of the eyelid or ear, where operation would leave a great deformity, or in inoperable cases, it is permissable to use the X-ray or massive doses of radium. It is most important to impress upon the patient that a recurrence of the disease is vastly more disfiguring than a proper operation.

3. *Cuboidal celled carcinomata* spring from the transitional layer of the rete, the layer of cells lying just above the basal cells, and not yet differentiated into prickle cells. These tumors are not especially common; they may be situated upon any portion of the body, they may be either ulcerative or fungous in character. They usually grow rather more rapidly than do the basal celled growths, and they may metastasize, although apparently not at an early date. In the rare instances where it has been reported that basal celled neoplasms gave rise to mestases it is probable that there was an error in diagnosis, and that the growth arose from the cuboidal cells. Microscopically no whorls are present, and the cells are rather larger than those occurring in basal celled cancers. In the gross the cancerous alveoli are almost as large as those of the prickle celled type. In early cases it is probable that a local operation is sufficient, but in late cases a complete operation should be performed.

4. *Prickle celled carcinomata* spring from the squamous or prickle cells of the skin or mucous membrane. They occur most commonly upon the lip, but may develop upon any portion of the body. Most malignant tumors of the mucous surfaces or of the limbs are of this nature. The tumors usually grow rather rapidly, they may be either fungous or ulcerative, or combine the two characteristics; the surface is usually rough and verrucose, and the infiltration is deep. These tumors nearly always metastasize; metastases have been found as late as five years after the removal of the original growth. Under the microscope it is noted that the cells are large, that they tend to form whorls, and that they stain more intensely with the acid dyes, such as eosin or orcein. To the naked eye the acini are large and resemble fine white threads radiating out from the surface. Because of the grave danger of growth in the neighboring glands it is imperative to remove these at the original operation. X-ray and radium are justifiable only in inoperable cases, as they cannot reach the glands with any hope of success.

5. *Carcinomata of the hair follicles,* excluding from consideration the multiple cystic epitheliomata of von Jarisch,[9] are rare, and usually occur upon the face or scalp. They tend to grow rather slowly and do not give rise to metastases, so a local operation is all that is necessary. It is possible that a fair proportion of the basal celled cancers may really have their origin from these structures.

6. *Carcinomata of the sweat glands* are also rare, and there is still considerable question as to their power to metastasize, but judging from analogy they should be able to do so at an early date.

7. *Carcinomata of the sebaceous glands* are almost unknown, possibly because of the fact that the fat cells so readily degenerate so as to be indistinguishable from other epithelial

cells. In one case under my observation metastases formed at a very early date.

8. *Naevo-carcinomata* (*melanotic carcinomata or sarcomata*) are still a bone of contention, as Fordyce[10] well points out. It is only certain that a few of these growths really spring from epithelial tissue, while the remainder may arise either from epidermal or mesoblastic tissue. As is now well known these growths spring from either pigmented moles or from other varieties of naevi, and metastases are often widespread by the time that trouble is noted in the original growth. These secondary deposits may be widely disseminated throughout the body and skin, or they may, in rare instances, be localized to the neighboring glands. Such cases only are curable. The others are not curable, but are usually preventable, for any mole or naevus that is the subject of irritation should be removed.

9. *Paget's disease* usually develops upon the breast adjacent to the nipple. However, it may develop upon almost any other portion of the body. At first there is a peculiar raw-looking eruption that is usually mistaken for eczema, but which refuses to heal. Then a tumor develops, sometimes in connection with the dermatosis, sometimes at a distance from it. It is still disputed whether the cutaneous lesions are primary or secondary to the cancer, but one important fact is clear, namely, that a section should always be taken from a suspicious area, and that if the peculiar-looking Paget's cells are found a complete operation should be performed, for metastases do develop from these neoplasms.

10. *Carcinoma en cuirasse* has been well studied by Pollitzer.[11] It is usually secondary to cancer of the breast, and pathologically consists of a blocking of the lymphatics by cancerous cells. Clinically there is a reddened, thickened area, that usually does not make the physician think of cancer, but rather of scleroderma or lichen planus.

A word must be said about the performance of biopsies upon malignant tumors. Simply excising a bit of tissue leaves gaping blood vessels and lymphatics, into which cancerous cells may escape. It is better to follow the use of the knife with a caustic, or still better to excise with a cautery, or with an old knife heated to a cherry red. In an emergency a piece of wire can be employed. The use of heat seals all openings as soon as they are made, and is a perfectly safe procedure.

Volumes could easily be written about treatment, largely in the way of criticism of both the surgeons and dermatologists, both of whom have not been sufficiently radical.

The knife is most generally used in the surgical treatment of cancer, and is indispensable in many cases, especially where it is necessary to remove the glands. In local operations it is useful for two especial reasons, first because it leaves a wound that can often heal by first intention, and second because it does not damage the removed tissue, thus facilitating pathological examination. At the same time many surgeons have the feeling that they have fewer recurrences when the cautery is used, or when the edges of the wound are cauterized.

The cautery, either actual or electric, is being more and more employed by surgeons in dealing with carcinoma. It is used just as is the knife, a safe margin being given and the tissue excised with it. It is really surprising how small a scar results in many cases, and the percentage of permanent cures is probably higher by this method than by any other.

The use of the *curette* is usually to be deplored, especially upon prickle celled neoplasms, for it can hardly reach deep enough to destroy the outlying ramifications, where a few cells have penetrated deeply into otherwise healthy tissue. To some extent the subsequent use of a deeply acting caustic, such as the acid nitrate of mercury, will offset this objection. In very superficial growths, and in a few cases of extensive rodent ulcers, especially those invading the orbit, this method is of extreme value.

Caustic pastes, in spite of their use by many of the leading dermatologists, are to be almost

unreservedly condemned. In the first place they are very painful, in the second place it is hard to control the depth of their action, and in the third place they are inefficient. Bloodgood has found that nearly one-half of the advanced cases of skin cancer coming to the surgical department of the Johns Hopkins Hospital give a history of treatment with caustic pastes of some kind. So far as the author knows no one has ever published a series of permanent cures effected by this method.

Fulguration, dessication and similar methods have not as yet been demonstrated to be permanent cures. In addition they have the fatal defect of not permitting examination of the tissues in order to determine the character of the growth. They are certainly not applicable to tumors that metastasize early.

X-ray is admittedly useful in inoperable cases, if only to lessen pain and discharge. It is also admittedly useful in early cases of basal celled cancer where operation would cause great deformity. It is also useful in the very old or very weak. With the exception of a few enthusiasts it is universally admitted to be dangerous in all cases where there is danger of early metastases, as in the prickle celled group. While it may cure the original tumor, still it will not cure a focus in a neighboring gland. Between these two extremes there is room for many honest differences of opinion, but the author considers it safe to say that in the vast majority of cases the knife or cautery has a much higher percentage of cures. When the X-ray is used it is probably best to use it in a few massive doses, as MacKee and Remer[12] are doing. Of course both the quality and quantity of the ray must be carefully determined.

Radium is very popular in certain hands, and, as Wickham and Degrais[13] have shown, can at times work wonders, but it is necessary to use very large amounts, which is not possible for the majority of either physicians or patients. While it is generally conceded that the rays emanating from radium are physically different from the X-rays, still the majority of expert radiologists believe that they can duplicate all of the results obtained with radium.

Internal treatment, with any known drug, has never been demonstrated upon a long series of cases to be of any value.

CONCLUSIONS.

1. Different types of cutaneous cancer behave very differently; the basal celled ones never metastasize, and the prickle celled ones nearly always do except in the case of pedunculated warts. The rapidity of metastasis in the others is as yet uncertain, and we need a long series of statistics upon them.

2. To properly treat a cancer of the skin we must know whether or not it is of a metastasizing nature. If it is the neighboring glands must be removed; if it will not metastasize, a local operation will suffice.

3. Because of the possibility of a basal celled cancer having a multicentric origin it should be more widely removed than is the usual custom, a permanent cure is more to be desired than a temporary beautiful cosmetic result.

3. The knife, followed by a caustic, or the actual cautery, is in the vast majority of instances the best means of removing a cancer.

4. Caustic pastes are to be condemned. X-ray and radium are useful in selected cases.

BIBLIOGRAPHY.

1. Pollitzer: Jour. Cutan. Dis., 1914, XXXII, 312.
2. Unna: Histopathology of Diseases of the Skin, Walker's translation, New York, 1896.
3. Hannover: Das Epithelioma, Leipzig, 1852.
4. Thiersch: Der Epithelkrebs, Leipzig, 1865.
5. Krompecher: Der Basalkrebs, Jena, 1903.
6. Bloodgood: Progressive Medicine, Dec., 1904.
7. Petersen: Bitr. z. klin. Chir., 1902, XXXII, 543.
8. Sherwell: Jour. Cutan. Dis., 1910, XXVIII, 487.
9. von Jarisch: Arch. f. Dermat. u. Syphil., 1892, 269.
10. Fordyce: Jour. Amer. Med. Assn., 1910, LIV, 91.
11. Pollitzer: Jour. Cutan. Dis., 1909, XXVII, 143.
12. MacKee and Remer: New York Med. Jour., March 29, 1913; Amer. Jour. Roentgonology, Dec., 1913.
13. Wickham and Degrais: Radiumtherapie, 2d Ed., Paris, 1912.

DISCUSSION.

Dr. Alexius McGlannan, Baltimore, Md.: Dr. Bloodgood has been called home and has asked me to open this discussion. First of all, in the paper, we note the fact that practically all malignant tumors of the skin go through a period of benign tumor, which is a period of warning. The patients have a warning, and if they are operated upon promptly during this period, the malignant tumor is prevented and the patient is cured. As far as our laboratory records and our own clinical experience go, the cure of the malignant tumor from the pigmeuted mole in the skin is practically impossible. There are a few scattered cases here and there—rare is the experience of individual surgeons—where the operation of removing the pigmeuted tumor and the next group of lymphatic glands has resulted in a cure. Of course, it is conceivable that one might strike a malignant tumor at a time when metastasis has not taken place. Then we might hope to cure the disease, but so far as experience goes, nearly every patient operated upon for such a malignant tumor is dead within two years, from the malignant tumor, without regard to the extent of the local operation—even after high amputations for tumors situated on the extremities.

The second point of great importance, and really of the most importance, is the necessity of distinguishing between the basal cell carcinoma of the skin and the squamous cell carcinoma of the skin. Everyone who has written on the subject and studied the cases knows that the basal cell tumor does not metastasize. All we have to do is to take care of the growth without regard to its extent. These are the cases which can be cured by radium, by X-ray, and occasionally by cancer paste, and there is one authentic case on record where the tumor disappeared spontaneously after a piece had been excised for diagnosis. Any strong connective tissue reaction is likely to cure the basal cell carcinoma on account of its low grade malignancy. In squamous cell we have a condition directly opposite to the basal cell. The squamous cell metastasizes to the glands early in its course. For the cure of such a tumor it is necessary to remove not only the local disease, but the next group of lymphatic glands. These two sets of tumors have relatively distinct distributions. The common skin tumors on the face above the mouth, except at the mucocutaneous borders, are basal cell tumors, as are tumors of the covered portions of the body. The common tumor on the extremities is the squamous cell tumor, and tumors about the mouth are the squamous cell tumors.

Concerning the covered portions of the body, one exception is the tumor developing in the scar of wounds that have long been in healing, on old burns, about the opening of chronic sinuses, and particularly the scar of X-ray burns. The tumors of these locations are squamous cell tumors, and require not only complete removal, but the removal of the next group of lymphatics for their cure.

The use of cautery is a most valuable remedy in our methods of treatment, particularly in the doubtful cases. Of the patients with cancer of the lip, that have come for secondary operation on account of metastasis to the glands of the neck, the patients operated on with a sharp knife, had all had extensive matastasis, while those operated with the cautery have had less extensive metastasis and sometimes none, even with a recurrence at the original site of the operation. So, when in doubt, use the cautery.

For the tumor situated on the extremities, it is best to excise the local tumor, cauterize the wound with the actual cautery, then examine the tumor microscopically. Should it be squamous cell cancer, take out the next group of lymphatic glands without further delay.

Dr. C. Augustus Simpson, Washington, D. C.—The X-ray men do not believe in cutting into these tumors in order to get a section for pathological examination, the result is that it is oftentimes impossible to distinguish clinically basal cell from prickle cell carcinoma. For this reason we are often without positive proof of the pathology of the lesion. I have heard the doctors say they had never seen or heard of a prickle cell carcinoma being cured by X-ray. I would like to refer them to an article by Dr. Pusey in the Journal of Cutaneous Disease. In this case he did make a biopsy and found the tumor to be a prickle cell carcinoma. If we consider the fact that the majority of the malignant tumors of the upper lip are prickle cell carcinomas and the number of lesions in this location that have been cured by Dr. Pusey and others with X-ray, I think we have ample proof of what the X-ray can do if properly applied. I believe that the X-ray will cure most of the malignant epithelial tumors of the skin providing the massive doses are given, properly screened. As soon as these tumors undergo malignant degeneration they at once become more radio-sensitive than the surrounding tissues. Yet Schultz, of Berlin, has shown that some of the lesions vary in this sensitiveness. If the correct hardness of the X-ray tube can be found, I believe few skin cancers will fail to resolute under the X-ray if given in large doses. I am not one that claims universal success in the treatment of internal cancers with X-ray. I think that the majority of these tumors will resist the ray because in filtering out the softer rays with aluminum filters we are often doing away with the very ray that often makes the tumor sensitive to the hard penetrating ray. Schultz has demonstrated that such a condition does take place in the treatment of skin cancers by X-ray. Radium has the same faults and the buried tubes do not entirely do away with this. I want to congratulate Dr. Hazen on his excellent paper and am also pleased with his opinion on radium. It has been getting too much unwarranted advertising and the results to be had with it have not met our expectations. There is not a single skin cancer which has been cured by radium that could not have been cured by X-ray with the new technique. A few laryngeal and vaginal warts have been cured by radium because it is impossible to apply the X-ray in those cavities, but the same lesions on the skin are cured every day by the X-ray. I will repeat the

statement that the X-ray will cure any skin lesion that radium will and this includes prickle cell carcinomas, as Pusey and others have shown.

Dr. E. C. Samuel, New Orleans, La.: In backing up Dr. Simpson in his remarks, I think what he said about the X-ray therapy of tumors of that kind is right. The reason why we did not get the results possibly five to six years ago that we get today is due to the modified technique of McKay, of New York. He described his massive doses some time last year in the Journal of Cutaneous Diseases. I do not know the exact number. The reason we had our failures before that was the small doses the radiologist was giving to the superficial tumor. With the massive dosage that is recommended by McKay, we give two or three exposures to the tumor, using a tube of very high penetration, as Dr. Simpson has said, giving us about seven or eight on the Benoist scale (?) using an aluminum filter of one to three millimetres in thickness, and thus get a very rapid reduction in the size of the tumor, but treatments of this kind can only be carried out by a competent radiotherapist and should not be attempted by any other man. The measurement of the dosage is a very essential thing to be taken into consideration. The dosage we give in my laboratory is measured by the Kenebeck meter. We give sometimes as high as 100-X, and see a disappearance of the lesion in four to six weeks afterwards. I have in mind a case of epithelioma of the nose, in which the dosage of McKay was given. At the end of four treatments, she got, in all, 50-X, I think. We had a disappearance of the lesion. When we see these things we are bound to think there is something in the X-ray yet.

Dr. Hazen closes: Regarding the melanotic tumors, it is possible that all of us are too pessimistic. I have seen at least two cases in which I am certain that a radical operation at an early stage could have saved the patients' lives. One case, a farmer's wife, in Maryland, had been pecked by a hen on the arm, and five years after the date of the local removal she came in with a practically inoperable mass of sarcoma in the axilla. I feel that if she had been treated with a radical operation at the start, her life might have been saved. In a few of these cases we might, occasionally, save a life by doing a radical operation at the start.

As regards X-ray treatment: In the first place, I am an X-ray man myself, and I know the technique pretty thoroughly, and personally I refuse to use it upon tumors unless I am certain of the diagnosis. I think it is radically wrong to use X-ray upon a squamous cell tumor, and I do not feel that the X-ray will do more than proper local excision would, and I have protested against the use of local excision alone. We have got to make our diagnosis first. We have got to get the glands out, and it makes no difference whether you completely remove the tumor with the knife or the X-ray. I think the X-ray is bad, because the pathology of the tumor is not studied at the start.

ON THE IMPORTANCE OF DESTROYING THE CERVICAL MUCOSA IN SUB-TOTAL HYSTERECTOMY AS A CANCER-PREVENTING MEASURE.*

By Geo. T. Tyler, A.M., M.D.,
Greenville, S. C.

Pt., Mrs. G. J. R., aet. 45, II para.; seen March, 1914. Four weeks ago she noticed a blood-tinged vaginal discharge. She had been operated upon in 1908, at Johns Hopkins Hospital for P. I. D. Perineal repair, removal of uterus (sub-total), tubes, ovaries, and appendix were done. Recovery uneventful; in fair health until p. i. On examination, a cauliflower growth protruded from the cervix, which fitted collar-like around it. In knee-chest position there was all the appearance of a cervical polyp; removal of which was advised. At operation, March 27, 1914, the growth proved to be a squamous-celled cancer, rising in the anterior lip of the cervix. Total removal of the cervix was done, leaving only a thin bridge of tissue between vagina and peritoneum. Recovery uneventful, but recurrence took place, which was treated by actual cautery, and caustics until a vesico-vaginal fistula resulted and later, a papilloma of the bladder grew from the scar. This was removed under spinal anesthesia in September, 1914, with the actual cautery, including a wide margin at the base. Later there was recurrence in the vaginal vault; for which repeated cauterization with the actual cautery has been done. Patient is now no better.*

In reviewing this case I censure myself for not removing the cervix by the radical abdominal operation, for though the microscope indicated that the growth was circumscribed, still the result showed that it had not been eradicated.

The question of malignant degeneration of

*Read in Section on Surgery, Southern Medical Association, Eighth Annual Meeting, Richmond, Va., Nov. 9-12, 1914.

*The pt. died January 26, 1915. She had been offered gratuitous treatment by radium; and as there were no palpable pelvic, inguinal, or lumbar glands, she was considered an excellent case for this treatment. But she refused it, became addicted to morphia, and finally succumbed.

the cervical stump is not a new one. That it occurs is known, but whether the cases are of sufficient number to warrant any change in operative procedure in order that it may not occur, requires investigation. The statistics are difficult to obtain, for in the cases where cancer of the stump appeared soon after hysterectomy, it was quite likely present at the time. Again, some authors, compiling cases do not give sufficient detail for verifying their tabulations. Especially is this true of the French, hence only a fair degree of accuracy can be attained.

Winter, in 1906, reported 16 cases, and went thoroughly into the subject. Chaput, in 1910, mentions 69 cases, including 22 reported by Richelot, 31 by Lasorbe and 16 by himself. He does not mention Winter's cases nor does he give further details of any of this list, except his own. Leonard, in 1913, tabulated 36 cases, including Winter's, and two from Dr. Kelly's clinic; and from other authors brought together a list of nearly 60 cases. I have gone over these cases as carefully as possible and do not think that more than 12 of Chaput's cases are included in Leonard's list. Placing it at 45, with Chaput's 69, we have 114 cases.

To find out the frequency in America, I sent a questionnaire to 400 surgeons. Among the 123 replies, there are reported 75 cases, to which I have added nearly 25 collected from other sources. [Bernier (by Meriel), Lesene, Noble (in addition to one reported by Leonard), Richardson, Rochard, Saligoux, Touffier (co-existing), Warnekros, Weisse, one each; Hinterstoisser, Lejars, Sutton (one co-existing), Stone, Témoin, two each; Hansen, Richelot (beside those reported by Leonard), three each.] This makes somewhat over 200 cases of malignant degeneration of the cervical stump—a larger number than is supposed to exist. There is a source of error here, for many are very likely co-existent. Winter thinks 7 of his 16, Leonard thinks 16 [illegible], are co-existent. Admitting that 5 per cent were co-existent, we still have a number large enough to consider means for preventing.

The experience of surgeons has varied in regard to this condition. Chaput reported 5 certain and 2 suspicious cases in 123 subtotal operations. Faure in the same discussion had never seen a case in over 1,000 subtotal hysterectomies. His experience was that the cervical mucosa became atrophic.* Among the replies to my questionnaire the cases were few.

With the idea of determining what treatment, if any, was given to the cervical mucosa, I asked:

(1) What is your treatment of the cervical mucosa in sub-total hysterectomy?

(2) How many cases of cancer of the cervical stump have you seen

(a) Of your own patients?

(b) Of other surgeons' patients?

(3) Do you think destruction of the cervical mucosa will prevent cancer in that cervix?*

Of those replying to (1),

26 or 22 % excise the mucosa.
16 or 13.5% use the cautery.
4 or 3.4% excise or cauterize the mucosa.
4 or 3.4% prefer total hysterectomy in all cases.
15 or 12.7% use carbolic acid or iodine.
1 or 1 % curettes.
52 or 44 % do nothing to the mucosa.

Some thought destruction would prevent cancer; others that it would not prevent the squamous-celled variety; others again thought it would not have any effect on prevention.

When we recall that cancer of the cervix occurs most frequently at the *portio vaginalis*, the excision or cupping out of the cervical mucosa must include that portion, as Dr. Kelly has suggested. This procedure also ren-

*The idea that atrophy of the cervical mucosa takes place after sub-total hysterectomy is common. I believe that if ligation of the uterine artery were done proximal to the cervical branch, atrophy of the cervical mucosa would be much more likely to occur. In most sub-total operations, ligation of this vessel is done high up on the cervix, distal to the cervical branch.

*I do not think I made this question clear, for I intended to convey the idea of total destruction [illegible] some of the replies.

ders easier closure to the cervix. The methods most likely to prevent cancer are thorough cauterization and total hysterectomy. But that the latter does not insure against it, is shown by the reporting of 13 cases of cancer in the vaginal vault after total hysterectomy. [Bozy, Delbet, Lejars, Schwartz, Tèmoin, one each; Quenu, Routier, two each; Lesorbe (quoted by Monclaire), four.] Here again the question of co-existence comes up. The use of caustics, it seems to me, can promise little more than destruction of the superficial cells, leaving the deeper and more dangerous ones to hypertrophy.

The whole question of cancer of the stump is so intimately associated with that of fibroids that it is not possible to consider them separately. But a discussion of this phase of the question is not my purpose. That there is a predisposition to cancer of the body in the fibroid uterus is no longer questioned. And this seems to extend to the cervical mucosa as well, for Winter reported 25 cases of cancer of the cervix in 1,270 fibroids. Piquand, also, in 1905, collected 137 cases of cancer of the cervix associated with fibroids. Of the cases of cancer associated with fibroids, over 60 per cent are of the body, while in uncomplicated cases of cancer only about 8 per cent are of the body. Bland-Sutton, Piquand (reporting 179 cases of cancer of the body with fibroid), Jansen (4.5 per cent of cancer in 306 fibroids), and others conclude that fibroid predisposes to cancer. In this connection it is well to mention that Warnekros, in 78 cases of fibroid found cancer in 7 cases. Mr. Herbert Spencer (personal communication, in 150 total hysterectomies, found cancer in 3. It was unrecognized, he thinks, before operation. Other cases of this kind are reported by Leonard.

As to methods of preventing cancer in the stump, Leonard has well said that it is largely a question of operation in the fibroid uterus. But that leaves 35 per cent to be prevented also.

There are many surgeons who advise the total operation; many also the sub-total. The former is the ideal operation, but it has increased morbidity and mortality. In reviewing the subject of operation, I find that a larger proportion of surgeons are doing the total operation than did ten years ago, many for fear of malignant degeneration, others to prevent leucorrhoea, as well. De Rouville in three recent contributions advises excavation of the cervical stump. He is a "sub-totalist," but thinks this technique has all the advantages of the total operation without its risks. Spencer does the total operation altogether. Mèriel, in 1910, reported the collected results from several clinics: In 631 total operations for fibroid, there were 52 deaths (8.2 per cent). In 601 sub-total operations for fibroid, there were 35 deaths (5.6 per cent). He quotes Dartigue, who gives 3 per cent mortality for each operation. I do not think this holds in America. Bovee, in 1906, thought the results of the two operations about equal. Boldt, at the same discussion, also thought the difficulties of the two operations about equal; but he is a "sub-totalist," unless the cervix is suspicious. Miller, in 1913, reporting 9,750 sub-total operations, gives the primary mortality as 4 to 5 per cent. But from some clinics the mortality is much lower than this. Spencer, in 150 total operations, had a mortality of 2.66 per cent.

Several others can be added, but I mention these only to show that many are advising the total operation. In one hysterectomy, by making circular incisions and traction, I removed the entire cervical canal, leaving only the vaginal mucosa, as the specimen on section showed. What operation shall be used is not so important as that the idea of cancer-prevention should be kept in mind. I do not think sufficient attention has been given to this question.

Total hysterectomy, complete excision or cautery to include the *portio vaginalis*, are most likely to prevent cancer. Destruction of this portion of this canal can also be done by the extension of Hunner's method for curing leucorrhoea, or by a modification of Percy's

NAME	Treatment of Cervical Mucosa	No. Self Cures	No. Cases	Will Destruction of Mucosa Prevent Cancer	REMARKS:
Ashhurst, A. P. C.	Rem. of cervix	0	0	Yes	If no epithelium no canc.
Baer, B. F.	None	0	0	No	
Barr, R. A.	Core it out	0	0	To great extent	For yrs has rem. mucosa removal of cervix better if possible
Beall, F. C.	None	0	0	Yes	Removal of stomach would also prevent cancer of that organ.
Boldt, H. J.	Leave it, in young	0	2	?	Leave as much cervix and mucosa as possible in young persons.
Bovee, J. W.	Tr. iodine	0	6	No. of squamous Yes of adeno& columnar	Removal of cervix better than removal of mucosa
Brack, LeRoy	None	0	0	Cannot say	
Brewster, L.	None	0	0	No.	
Bryan, W. A.	Leave it alone	0	0	The majority	Destruction of mucosa better than total oper.
Bunts, F. E.	Carbolic and alcohol	1	0	No	Think cancer co-existent in this case
Bruce, H. A.	None	0	0	No	
Burch, L. E.	None	1	0	No	
Butler, J. E.	Curettage	0	0	Yes	Total operation when not contraindicated
Byford, H. T.		1	0	Yes, of cylinderical cells. No, of pavement celled	
Caldwell, C. E.	Destroy with cautery	0	0	Possibly	
Caldwell, Robt.		0	0	No	Rarely do sub-total op.
Carmoday, J. E.	None	0	0	Yes	
Carr, W. P.	None	0	0	Yes	Know of no cases where it has followed op. for fibroids
Casler, D. B.	Rem. cervix	0	2	If all dest., yes	Prefer total operation
Clark, J. G.	Actual caut.	1	0	Yes	Have cauterized stump with actual cautery for [illegible] years
Cook, Lamar	Cauterize	0	1	Somewhat	Vaginal portion of cervix still active to cause sq. epithelioma
Cox, H. C.	Cauterize	1	1	No	Destroy ulcerated cerv
Cox, H. P.	None	0	0		You [illegible] No, of sq. epithelial type
Cox, W. J.	None	0	0		
Cooke, A. B.	None	0	0	No	
Crisler, J. A.	None	0	1		It looks reasonable.
Cummins, W. R.	[illegible]	0	1	Yes	Do [illegible]
Cullen, E. K.	[illegible]	0	0		Would have possibility
Dabney, Hugh	Dilate & cau.	0	2		Do [illegible] would be better
Dandridge, W.	None	0	1	No	Rule [illegible] trauma not causal factor
Davis, J. D.	Electric caut.	0	0		
Dennis, J. B.	[illegible]	0	1	Not necessary	
Dennis, H. B.	Act. cautery	1	1	Very likely	Have used cautery to destroy [illegible] & prevent recurrence
Dennis, P. I.	[illegible]	2	0	Yes	Do not [illegible] raw cervix, [illegible] Report of [illegible] in the sub-total [illegible]
Dorsett, J. H.	None	0	0	Yes	Do not [illegible] or other [illegible]
Dorsey, J. G.	None	0	0	No	
Dunn, J. W.	[illegible]	1	2		
Dye, P. I.	None	1	0	Don't know	[illegible] after [illegible]
Dyer, [illegible]	None	0	0	No	
Frank, R. L.	Nothing	0	0	No	[illegible]
Gardner, W. C.	[illegible]	0	0	[illegible]	[illegible]
Gilmer, J. H.	Nothing	0	0	No	
Gilmore, J. A.	[illegible]	0	0	[illegible]	[illegible]
Goodpasture, A.	Cut it out	0	1		Would [illegible] well.
Green, H. H.	Pure carbolic	0	0		Do not [illegible] well.
Griffith, F. W.	Cup it out	1	0	Possibly	Mucosa ought to be cut out.
Hammond, A. L.	Act. cautery	1	1	Yes	
Hammond, C. A.	Cauterize	0	1	No	
Haskell, L. W.	(See rem.)	0	0	Yes	Excise with knife or cautery, if multiparous
Hayd, H. E.	Nothing	0	0	Don't know	
Healy, Wm. P.	Excision of upper part	0	1	Yes, of cylindrical No, of squamous	
Hirst, B. C.	Conical exc.	0	0	Possibly	Leave little stump and less mucosa.
Holden, G. R.	Remove by knife or cau.	0	0	Yes	Have seen 2 cases where cancer was present and not recognized.
Horsley, J. S.	None	0	0	Don't know	
Hundley, J. M.	None	0	1	Yes	Usually, total operation
Huntington T. W.	Rem. all muc.	1	0	Possibly	It seems rational
Hutchins, H. T.	Excision	0	0	No	Total op. preferable in every case
Ill, E. J.	None	0	0		None in 443 cases of fib.
Jackson, J. N.	Excision	0	0	Possibly	Excise as precaution and to obviate discharge
Jackson, Wm. R.	Nothing	0	0	No	To des. cervix would do so.
Jones, E. G.	Nothing	0	0		200 cases in past ten yrs. no attempt to follow up
Kammerer, F.	Excision	0	0	No opinion	
Kanavel, A. B.	None	0	0	Yes	In normal case of fib. not nec. to des. mucosa
King, A.	None	0	0	Yes, unless cancer is in body	Rem. cervix when cancer is present in body
Kirchner, W. G.	Tr. iodine	2	0		Such treatment advisable in sub-total operation
Kirkly, C. A.	Pure carbolic	0	0	Doubtful	
Kohlmann, W.	Excision 50%	3	0	Yes	
Leigh, S.		0	0	Possibly	
Lewis, T. S.	Tr. iodine	0	1	Yes	If sub-total op. is done before 30 yrs. of age, & ovaries removed, atrophy of mucosa occurs
Lothrop, E. P.	Act. cautery	1	0	Possibly	Cervix should be left as free from irritated epithelium as possible.
McGannon, M. C.		0	0		No cases in 200 op.
McLaren, A.	Nothing	0	0		None in 395 cases
McMurtry, L. S.	Excision	1	0		I do not think special treatment indicated.
Maddren, W. H.	Pure carbolic or iodine	0	0	No.	Complete op. when cancer in body.
Malone, B.	Pure carbolic	0	0		Not necessary from my experience
Manton, W. P.	Nothing	1	0	?	From large experience think it well to let mucosa alone.
Mason, J. M.	Leave it.	0	0	Yes	Should be removed when possible
Mastin, W. M.	Curette and cauterize	0	0	It is	Know of no statistics on subject
Mayo, J. J.	Curette & iodine	0	0	Yes	Never leave cervix if diseased; cervix should be rem. in doing hysterectomy
Morris, R. T.	Excise mostly	0	0	Yes	A good preventive measure.
Moschcowith, A.	Pure carbolic	0	0		
Murphy, J. B.	Nothing	0	0		Think atrophy of stump occurs after sub-tot. op
Newell, F. S.	Carbolic and alcohol	0	0	Probably	In most cases
Noble, C. P.	Nothing	1	0	No	Epithelioma more common than adeno-carcinoma.
Parker, P. L.	Cauterization	0	1	Certainly	None in over 400 of my cases A precaution worth taking.
Percy, J. F.	None	0	0	Yes-as aid	
Polak, J. O.	[illegible]	0	0	Yes	If excision of the entire submucous portion of p. vaginalis
Porter, M. F.	[illegible]	0	0	I do not	My experience is that cancer begins at vaginal portion
Potter, C. A.	None	0	0		If I [illegible] & I repair cervical lacerations
Prentiss, A.	None	0	0	Yes	I have seen no cases of this kind.
Reder, F.	Thermo caut	0	0		The measure carries a certain amount of assurance; in supra-vaginal op. I repair cervix if lacerated
Reed, H. W.	None	0	1	Yes	
Reed, H. H.	None	0	2	Yes of adeno No of epithelioma	
Reed, H. P.	None	1	0		Complete destruction might diminish tendency, partial would stimulate
Reed, H.	Complete excision with knife	0	1	Yes, if deep enough	
Reed, H.	Act. cautery	2	0		

Robins, C. R.	None	0	0	I think favorably of the suggestion.
Rogers, M.	None	0	0	No
Ross, G. G.		0	0	Tot. op. is better.
Royster, H. A.	Cover it up	1	0	Possibly—One in over 500 opera.
Ruffin, K.	Cone excis.	0	0	If cerv. susp., total op.
Rushmore, S.	Cone excis.	0	3	Yes — To remove cervix is only way to destroy mucosa
Scott, A. C.	None	1	0	Yes
Sherrill, J. G.	Excision	0	0	Probably
Slemons, J. M.	None	0	1	
Smead, L. F.	Cone Exc.	0	0	Don't know
Smythe, F. D.	Excision	1	1	Yes adeno — Rem. cone to prevent leucrrheoa and cancer
Stillman, S.	Act. cautery	0	0	No disposition to cancer unless cervix is lacerated
Taussig, F. J.	Upper ½ rem	1	1	Not always — Tot. op. whenever cervix is abnormal
Taylor, H. C.	Excision	0	0	Would help — Condition rare
Thompson, J. E.	Carbolic	0	0	Yes
Trout, H. H.	Cautery	0	3	Yes
Turck, R. C.	Removal	0	0	Yes
Vance, A. M.	Pure carbolic	0	0	Problematical — Better to do total op., if cervix is suspicious
Vaughn, G. T.	Nothing	0	0	Doubtful
Walker, E.	Excis. or cautery	1	0	Don'tknow — Tot. op. better in most cases
Wathen, J. R.	Nothing	0	0	No — Cervical mucosa disappears soon after subtotal operation
Watkins, I. L.	Cautery	0	0	Not always
Webster, J. C.	Cautery	0	0	It would greatly diminish the risk.
Wells, B. F.	Nothing	0	0	No — Total op. where cervix is torn or diseased.
Wight, O. B.	Nothing	0	0	? — Don't believe it would make any difference
Williams, J. W.	Cone excis.	2	0	Can't say
Winslow, R.	Nothing	0	0	No
123 Replies		32	43	

method. It need not be done at the time of operation, but later if the patient's condition demands.

En resumè. I should like to urge that a more careful visual examination of the cervix be made before operation, and that operation be undertaken with the idea of preventing malignant degeneration of the cervical mucosa. If this be done, I feel certain that fewer cases of this condition will occur.

BIBLIOGRAPHY.

Baldwin: Am. J. Obstet., 1903, p. 848.

Bovee, J. W.: Surgery, Gynecology, and Obstetrics, 1907, Vol. IV, No. 3.

Boldt, H.: Discussion of Bovee's paper.

Byford: Discussion of Bovee's paper.

Hill: Discussion of Bovee's paper.

Richardson, Maurice: Discussion of Bovee's paper.

Stone: Discussion of Bovee's paper.

Condamin: Zentralbl. f. Gynek., 1903, p. 544.

Chaput: Bul. et Memoir de la Soc. de Chir., Paris, 1910, XXXVI, pp. 610 and 798. (This volume contains three or more papers and several discussions; the following names are those who took part in the discussions:

Auvery: id., p. 734.
Bozy: id., p. 829.
Delbet: id., p. 613.
Faure: id., p. 612.
Lejars: id., p. 732.
Monclaire: id., p. 703.
Monod: id., p. 703.
Morestin: id., p. 701.
Potherot: id., p. 696.
Quenu: id., p. 614.
Riche: id., p. 733.
Routier: id., p. 733.
Schwartz: id., p. 701.
Savariaud: id., p. 701.
Saligaux: id., p. 702.
Segond: id., p. 702.
Temoin: id., p. 827.
Tuffier: id., p. 731.

de Rouville: Archiv. Mens. d'Obstet. et de Gynec., Paris, July, III, No. 7, pp. 1-48, 1914; Revue practiq. d'Obstet. et de Gynec., No. 10, p. 289, Oct., 1912; Gynec., 1912, XVI, Sept.

Folgowski: Gynak. Rundschau, VIII, Jahrg, 1914, Hft., 10, p. 351.

Hansen: Zentralbl. f. Gynaek, 1913, No. 17, pp. 601-640.

Hartmann: La Gynecologie, 1903, p. 402.

Hinterstoisser: Zentralbl. f. Gynaek, 1903, p. 1382.

Jacobs: Bull. Soc. belge. de Gynec. et d'Obstet., 1913, XXIV.

Jansen: Monatschr. f. Geburtsch. u. Gynaek, 1914, XXXIX, p. 207.

Leonard: Annals of Surgery, LVIII, p. 373, 1913.

Lewis: Surgery, Gynecology, and Obstetrics. Jan., 1913, p. 104, Vol. 16.

Mann: Gynecological Trans. Phil., 1902, p. 171.

Manton: Mich. State Med. Soc., 1913, XII, 574.

McDonald: Am. Med., 1913, XIX.

McMurtry: Surgery, Gynecology, and Obstetrics, Vol. XVIII, p. 556.

Meriel: Annales de Gynec. et d'Obstet., 1910, VII, 2nd series.

Miller, J. R.: Surgery, Gynecology and Obstetrics, 1913, March, p. 315.

Monod: Rev. de Gynec., Paris, 1904, p. 113.

Newham: Bristol Med. & Chir. Journal, XXXII, 37, 1914.

Piquand: Annales de Gynec. et d'Obstet., 1905, September and October.

Richelot: Bul. et Mem. de Soc. de Chir., Paris, June, 1904; Revue de Gynec., 1904, p. 704; La Gynecolog., 1903, p. 399.

Ries: Surgery, Gynecology, and Obstetrics, Vol. 16, p. 104, Jan., 1913.

Rochard: Rev. de Gynec., Paris, 1904, p. 113.

Rubin, J. C.: Am. Journal of Surgery, 1913, XXVII, p. 411.

Schauta: Wein. Med. Wochenschr., 1913, 63, 13.

Spencer, Herbert: Albutt's System of Med., also personal communication.

Sutton, J. B.: Journ. Obstet. & Gynecol., British Empire, 1906, Vol. X; Journ. Obstet. & Gynecol., British Empire, 1904.

Turner: British Med. J., 1905, II, p. 953.

Vanverts: J. de Chir. et Annal. de la Soc. belg. de Chir., 1907.

Warnekros: Archiv. f. Gynaek, 1912, XXCVII, p. 292.

Weibel: Archiv. f. Gynaek., 1913, C, p. 135.

Weisse, F.: Zentralbl. f. Gynaek., 1910, XXXIV, p. 1529, No. 47, Nov. 19.

Winter: Ztschr. f. Geb. u. Gynaek., 1906, LVII, p. 8.

DISCUSSION.

Dr. Wm. Kohlmann, New Orleans, La.: The destruction of the cervical mucous membrane in supra-vaginal amputation is, to my mind, a very important factor. I have seen five cases of carcinoma of the cervix after sub-total hysterectomy; saw two cases during the last year. The operation of these cases is very difficult on account of adhesions; the operation is probably not extensive enough. I preferably do a panhysterectomy. In average patients the mortality is hardly higher, and the morbidity considerably lower. Of course it is easier to do a supra-vaginal amputation and it can be done in a shorter time.

Dr. H. Webb Griffith, Asheville, N. C.: I do not thoroughly agree with Dr. Tyler. Of course, by being as radical as he recommends you will, once in a while, in a huge number of cases, save one. You will recall that the cervix and body of the uterus are both lined with a single layer of epithelium, while the vagina and outer part of the cervix are lined with many layers of epithelium. Now we know that from the single layer of cells arise the adeno-carcinomata both of the cervix and of the body, while from the squamous epithelium of the outer part of the cervix arise the squamous-celled carcinomata. The adeno-carcinomata of the body is the least malignant, while that of the cervix is most virulent. The squamous-celled type ranks between the two in virulence. Now grant that in cupping the cervix you get out all of the mucosa (which I doubt), you have only removed the danger of one kind of cancer—the adeno-carcinoma—and still have the danger of the squamous-celled type. Now I, personally, do a cupping in most of my cases—not with the idea of lessening the cancer, but because you lessen the amount of subsequent leucorrhoea and also can better approximate the cervical edges. When I have reason to fear malignancy because of obscure bleeding or because of a degenerating fibroid, I think then a complete hysterectomy would be preferable to a sub-total; but in the inflammatory conditions I think a subtotal is sufficiently radical.

Dr. Edmund J. Horgan, Fairfax, Va.: Any effort to prevent cancer is of interest to all of us.

Now, in regard to cauterization of the cervix: In the hands of some men it is undoubtedly done well, but I have seen it done when I did not consider it to be thoroughly or completely done. I do not think the epithelial cells in the glands of the cervix are always destroyed, because the glands penetrate deep into the muscle, and if the method is not complete enough to destroy the cells on the portio vaginalis the effort is a failure, especially if there is a [illegible] from an old laceration—there is where the danger lies.

The argument is often made that sub-total hysterectomy is done so that the round ligaments can be attached to it for support, but it is not necessary to leave the cervix in for this. If one wants to fasten the round ligament they can be sutured to the stump of the vagina as well as to the cervix.

The question is: Is sub-total hysterectomy a good procedure where one is trying to prevent carcinoma? In the case of a woman who has never been pregnant—a young woman, thirty years of age, with fibromata uteri, as we often see in the negro, we might be justified in doing a subtotal hysterectomy and an extensive cauterization of the cervix. Where you have a woman in the cancer period of life, who has had one or more pregnancies, I think the removal of the cervix should be complete. You can call the complete hysterectomy radical, but in dealing with cancer or trying to prevent it, one has to do complete work. I would advise a complete hysterectomy in every operative case where the patient is in the cancer period of life, or where we are trying to prevent the occurrence of carcinoma. It is as easy to do as it is to do some of the cauterization work which is necessary.

Dr. Emil Novak, Baltimore, Md.: We cannot generalize in the discussion of such a question as this. Each case should be considered individually. While it is true that cancer of the cervix does develop after sub-total hysterectomy in a certain percentage of cases, the occurrence is sufficiently rare to justify us in adhering to the sub-total method in the great majority of cases. Careful consideration, however, should be given to the condition of the cervix before operation, and in the presence of any condition which might be looked upon as pre-cancerous, such as extensive laceration with hypertrophy or erosion, the subtotal technique should be chosen. This seems to me to be preferable to the less certain methods of removal or destruction of the cervical mucosa alone. It would be very unwise to advocate total hysterectomy as a routine in all cases, for it is unquestionably somewhat more dangerous than the sub-total method, besides being more tedious and requiring more time. As a matter of fact, numerically speaking, I believe that with most operators, the cervix is more frequently removed for the prevention of persistent leucorrhea than for prevention of cancerous degeneration of the cervical stump.

Dr. Edward H. Richardson, Baltimore, Md.: I was deeply interested in Dr. Tyler's paper.

With reference to the frequency of cancer of the cervix following sub-total hysterectomy, during ten years close identification with the Gynecological Department at the Johns Hopkins Hospital, including the large out-patient clinic, I have seen but two cases. The rarity of the condition, however, does not argue against the adoption of any reasonable measure which offers additional protection from cancer.

I would like to ask Dr. Tyler if in reviewing the literature, he found any difference in occurrence of this type of cancer in multiparous and parous women. Whether, in other words, the lacerations of the cervix, with its associated pathological changes, which always occur in childbirth, constitutes a pre-cancerous condition after the body of the uterus has been removed.

Regarding Dr. Griffith's remarks, it is well to remember that while it is true the procedure advocated by Dr. Tyler destroys only the mucous membrane lining the cervical canal, leaving untouched the squamous epithelium covering the portio vaginalis, yet if thoroughly done it possesses at least two virtues to recommend it,

namely, the destruction of the source of adenocarcinoma of the cervix; that is, the gland-bearing mucosa, and consequently the source of the leucorrhoea also, which may be the particular irritant responsible for the development of squamous-celled carcinoma.

It is a very simple procedure to destroy this mucous membrane, requiring only a few moments to complete it.

Dr. Tyler (closes): I wish to thank the gentlemen for their views. I do not wish to be misunderstood, nor do I want to advocate any particular method of operation. You can do it any way you like—take out the entire uterus, if that seems to be feasible; you can apply the cautery; or you can do the thorough excision. Fortunately, the application of the cautery is very easy, as Dr. Hunner has frequently shown, after operation. He tells me he has a number of cases of leucorrhoea. After the operation he simply makes spoke-like cauterizations deep into the cervical mucosa. Or a Percy iron applied to the dilated cervix through the water-cooled vaginal speculum gradually destroys the mucosa. I do not advocate the total operation, but after a thorough inspection we ought to be governed by what we find, and operate with the idea of preventing cancer. That is my theme: Prevention!

In reply to Dr. Richardson's question, I want to say that the cases of cancer appear to have occurred more frequently in multipara, but fibroid is more frequent in the nulliparous woman. Why, I do not know. As to lacerations as the cause of cancer that is a popular idea, and I have not seen anything to controvert it. I think lacerations do predispose to cancer, and though I have not attempted an investigation of that question, my observation tends to substantiate the idea.

Lest I be further misunderstood, remember the title of my paper: "Destruction of the Cervical Mucosa in Sub-total Hysterectomy."

EARLY DIAGNOSIS OF CANCER OF THE RECTUM.*

By E. H. Terrell, M.D.,
Richmond, Va.

There is no disease which causes more intense suffering than cancer, and none upon which humanity looks with more dread. In recent years, particularly during the last decade, experts throughout the whole civilized world have had their attention focused more and more upon this dreaded malady. Magnificently equipped laboratories, with unlimited means at their command, have been established in various places, and international conferences are held from time to time, at which enthusiastic workers from all parts of the world meet and discuss the results of their researches. While much has been learned in regard to the nature of the disease, its origin and cause are still unknown, and no definite and certain means of treatment have been discovered. It is earnestly hoped that a specific will in time be found, for if we are to give credence to the statistics at hand, cancer is increasing at an alarming rate. Some maintain, however, that this increase is more apparent than real, because of improved methods of diagnosis, more accurate statistics and better cooperation on the part of the public. At any rate the annual mortality from cancer in our country is appalling.

The discovery of a cure for cancer, other than its eradication by excision, would seem to depend upon the proof of a parasitic origin, and it is along this line that indications point to a possible hope. While they are in the minority, there are quite a number of very enthusiastic supporters of this theory. Probably the best evidence yet produced favoring this side of the controversy is that brought out by the Bureau of Plant Industry of the United States Department of Agriculture. Here it seems to have been proven, rather conclusively, that cancer in plants is due to cell stimulation, the result of a parasitic infection. A report of these experiments should be in the hands of every physician, and may be gotten by applying to the Department of Agriculture. It is not only interesting but instructive. While the signs may be somewhat encouraging, it is not for us to sit idly by and wait until the experts give us some easy and more definite means of treating this very prevalent and distressing disease. We know that there is a stage in every malignant growth in which it is entirely local, and at which time, if accessible, it can be permanently eradicated. Bloodgood and others even go further than this and say that cancer never originates in

*Read in Section on Surgery, Southern Medical Association, Eighth Annual Meeting, Richmond, Va., Nov. 9-12, 1914.

healthy tissue; that there is always a pre-existing defect which is benign but favorable to cancerous development. From this idea has arisen the use of the term "pre-cancerous," as applied to benign lesions, which, left alone, ultimately result in malignancy. To my mind it is a very fortunate term, and its use should be encouraged. It has been predicted that the future of medicine will be largely preventive, and if we can instill into the minds of the public that cancer is in a large measure preventable, then we will have accomplished much towards its eradication. To get the lay mind to comprehend this is going to be a hard and tedious task, but working together, each in his own special field, we may accomplish much.

The advocates of the pre-cancerous treatment lay particular emphasis upon the attention of lesions occurring upon the surface of the body and exposed mucous membrane. These, of course, are more readily detected and their behavior more easily observed than those which occur in deeper portions of the body.

In a paper on "Multiple Adenomata of the Rectum," read before the American Proctologic Association at Atlantic City two years ago, and published in the September issue of the *Proctologist*, 1912, I maintained that cancer of the rectum was almost invariably preceded by benign ulcerations. At this time I am more thoroughly convinced of the correctness of that assertion, although most of the cancers of this region seen by me have so far progressed that it is utterly impossible to locate by examination the original site of the growth. Taking careful histories of these cases, however, will always reveal the pre-existence of a fissure, ulcerating hemorrhoids, polyp, diarrhoea or some symptoms referable to the rectum. In most cases the symptoms have existed for years. Many diseases of the rectum are of a simple nature and easily cured, but there is no portion of the body which receives less consideration when diseased. The great prevalence of hemorrhoids and the tendency of the laity, and some of the profession, too, I am sorry to say, to attribute every disorder of these parts to them is largely responsible. Why should not a discomfort or pain about the rectum, a persistent diarrhoea with tenesmus, or loss of blood at stool demand as thorough an investigation as symptoms of disease in other parts of the body? The rectum is easily examined if one is equipped with the proper instruments. With some experience, the interpretation of the findings are not usually difficult. Not until the profession realizes that inflammatory and ulcerative lesions about the rectum are great predisposing factors to malignancy in this organ will we accomplish much toward the prevention. Few cases of malignancy in the rectum are seen by the surgeon until most of the guaranteed hemorrhoid salves have been exhausted. The delay, while these are being tried out, has robbed many an unfortunate of the last vestige of a chance. When he take into consideration that 50 per cent of all cancers occur in the gastro-intestinal tract, and that 16 per cent of these occur in the rectum or sigmoid, we should readily understand how important it is to thoroughly examine every patient who presents rectal symptoms. Even youth does not preclude the possibility of malignancy, for several cases of cancer of the rectum have been reported in children as young as 15 years.

As previously stated, I cannot believe that it is possible for cancer to originate in a healthy rectum. Except reflexly, no organ in perfect health will give symptoms. No disease of the rectum can exist very long without manifesting itself in some way or other, and frequently it is done in no very uncertain manner. Every one is duly warned in time, but often these warnings are unheeded. The symptoms from lesions which will become malignant may not be different from those which will not. In fact, there is no way to differentiate between them. We must urge all to seek the best advice and an examination immediately upon the appearance of these warnings. No treatment should be attempted until after a proper examina

tion. This advice is applicable not only with reference to the rectum, but to diseases in every part of the body.

It is true that but few of the many who suffer from rectal disease develop cancer, but remember that 8 per cent of all cancers occur in the rectum or sigmoid, certainly a sufficient number to claim the attention of every physician.

With our present knowledge of the disease, cancer cannot be conquered unless the early warnings of so-called innocent lesions are heeded.

Malignant diseases of the rectum come on insidiously. There are no characteristic or pathognomonic symptoms in the early stage. Most often there is a continuation of former symptoms with gradually increasing severity. Once begun it spreads rapidly, as a rule, and metastasis occurs early. The only treatment is excision, which is a very formidable operation. At best the percentage of cures is small. An ounce of prevention, at the proper time, would reduce cancer of the rectum to an almost negligible quantity. It is to be hoped that each of us, and physicians generally, will become more alert to the responsibilities resting upon us in regard to this very serious problem, for it is only through us and our teachings that cancer will become recognized as a disease largely preventable.

Let us be exact and methodical in our dealings with patients who come to us with rectal symptoms. There was a time, and not so long ago, when a physician's ability was judged largely by the quickness with which he passed patients through his office. He was considered an expert who could diagnose his cases intuitively. Fortunately, the day of the snapshot diagnostician is passing. Those who are satisfied with such a slight consideration of their ailments had best consult a druggist and save a fee.

A positive diagnosis of cancer of the rectum in its earliest stage is not always easy. In fact, there are often many difficulties, but on account of the ease with which digital and proctoscopic examinations can be made the difficulty in diagnosing cancer of the rectum is less than when the growth is located in other parts of the bowel. We may say with a great deal of confidence that a certain lesion is benign and that another is malignant, but there still remains a number which the clinician cannot say with assurance are benign or malignant. Many of these which clinically are on the border line can be definitely diagnosed by the microscopist, but there are certain other growths upon which even the most expert pathologist would be unwilling to pronounce a positive opinion. Sections from such growths sent to a number of pathologists will probably bring back different reports, and some will be uncertain. Whether one is justified in taking a section from a suspicious tumor for diagnostic purposes is a mooted question. Personally, I think it bad practice unless we are prepared to operate immediately in case malignancy is found. One must be certain of the diagnosis before a radical operation for cancer of the rectum is done. Amputation of the breast for suspected malignancy where the diagnosis is somewhat in doubt may be justifiable, and in case the growth proves non-malignant no harm is done, except probably some unnecessary mutilation Excision of the rectum, however, is a much more serious operation and one accompanied by many possible dangers. The patient should not be subjected to these dangers unnecessarily. The operation should be done only as a means of saving life, and in no disease less serious than cancer is it indicated. If in doubt as to the diagnosis, reliance should be made upon a microscopic examination of a portion of the growth after the patient is prepared for operation. Unfortunately cancer of the rectum is seldom seen until the most inexperienced find no difficulty in diagnosing it. At this time, except for the satisfaction of knowing how to properly sign the death certificate, the diagnosis might as well not be made. The early diagnosis of cancer of the rectum without a digital, ocular or sometimes

a microscopic examination, is not possible.

Warnings of cancer of the rectum are not pronounced. There are no early symptoms which can be said to be pathognomonic. It is unfortunate that nature has not endowed humanity with some distinct symptom by which the approach of cancer might be detected. One of the greatest fallacies in connection with the disease is the belief that it is a painful affection. Would to God that it were. This one erroneous idea has done more to keep up the mortality of cancer than all others combined. The absence of pain in a suspicious growth is one of the strongest points in favor of malignancy. Whenever a patient complains of chronic diarrhea, the discharge of pus, blood or mucus, a bearing down or sensation of fullness in the ano-rectal region, cancer should be suspected until by examination and all other improved methods of information, some other cause is found responsible for the symptoms.

When the tumor is within reach, the educated finger can generally be depended upon in making a diagnosis. When higher up the proctoscope is invaluable in locating and inspecting the nature and character of the growth. Care should be exercised, however, in the introduction of this instrument, for if ulceration be present there may be danger of rupturing the bowel.

After all has been said in regard to the diagnosis of early cancer of the rectum it resolves itself into an early examination and tracing to the source all suspicious symptoms The responsibility for the failure to recognize cancer of this region early and, as a consequence, the comparatively small per cent of cures, should be proportioned between the profession on the one hand and the public on the other. It is requisite that the profession take the lead in regard to this most serious problem. The public is skeptical and ignorant on the subject.

The inherent dread of an operation keeps many a sufferer from consulting the physician until it is too late. They must be educated to the fact that cancer is curable if treatment is instituted early enough, and better still, that it is preventable if proper attention be given these lesions which we recognize as possibly pre-cancerous.

DISCUSSION.

Dr. S. T. Earle, Baltimore, Md.: I wish to emphasize the necessity for early recognition of cancer of the rectum, because fully 75 per cent of the cases are inoperable when referred to me.

The profession views too lightly the early symptoms of cancer of the rectum, namely, diarrhoea, slight hemorrhages, pain, tenesmus, etc., therefore, whenever a case presents itself with these symptoms, a thorough examination should be made, both with the finger and proctoscope.

The American Medical Association has recognized the need for such an awakening on the part of the profession, to the necessity of recognizing cancer in its earliest stages in various parts of the body, by appointing a committee to solicit short papers from men in the different specialties, on the early recognition of cancer in their respective fields of work. As a means to that end, medical students should be thoroughly trained to make rectal examinations, in order that they might learn to interpret both normal and abnormal conditions. They are just as easy to interpret and recognize as similar conditions in other outlets of the body.

I was very glad to learn, on my way to Richmond, from a visiting member of the staff of Baltimore City's Alms House, that they make it a rule in their hospital, whenever a thorough examination of a patient is necessary for diagnostic purposes, or whenever a patient has an obstinate case of diarrhoea, the passage of mucous or blood from the rectum, that their resident physicians shall make a thorough digital and proctoscopic examination of the rectum.

I urge upon the profession generally the necessity of making such examinations at the earliest appearance of any of the above symptoms, because it is then only that we can expect any permanent relief from operative procedures.

As I stated previously, fully 75 per cent of these cases I let pass by without undertaking any radical measure for cure, yet I have gotten very good results in a limited number of cases where the operation was done early, and yet in every one of them the disease was sufficiently advanced to make a probable diagnosis macroscopically.

I have one case of adeno-carcinoma that has survived the operation, without recurrence, twenty-two years; another twenty-one years; one spindle-cell sarcoma for eighteen years; another adeno circinoma seven; another three years. These are sufficient to show the results that can be obtained when the operation is done early.

Dr. Osler, whose advice we value and appreciate at all times, used to reiterate time and again to his students, that "they had never fulfilled their duty to their patients when making a general examination, until they had examined the rectum."

Dr. John L. Jelks, Memphis, Tenn.: I wish to voice the expression of Dr. Earle and magnify the gravity of this situation. It is a sad commentary that more than 75 per cent of cases of cancer of the rectum that I have seen were inoperable. Last week I was called to see the fourth case that had come to me from one county in Tennessee, and all of them were inoperable. Now, gentlemen, everyone of those cases has a pathology that was in the beginning operable and perhaps entirely pre-cancerous. The finger would have sounded the warning that would have enabled those unfortunates to have escaped a horrible death.

When we feel a growth or an ulcer, anything hard or peculiar or unusual in the rectum, is the time that we were getting busy and finding out the true nature of the case.

We have removed adenomata of the rectum that were entirely benign, but had I left those growths there later on, perhaps, we would have had cancer. Had it not been for such simple precautions those men would have been today in their graves, victims of cancer. Few of the colleges of this country teach proctology as proctology. It is a sad commentary still that not half of them possess a proctoscope. I was amazed when I went into my own city hospital two years ago and asked for a proctoscope and two graduate internes were present, neither of whom knew what a proctoscope was.

Dr. Stephen Watts, Charlottesville, Va.—I think this is an extremely valuable paper of Dr. Terrell's—valuable to us and will be still more valuable, I think, to the general practitioner, because most of us here have surgical leanings? The most astonishing thing in the world is the reluctance of the general practitioner to make a digital examination of the rectum. He seems to think that he loses the respect of the patient by inserting the finger into the rectum. As a matter of fact, I think the respect of the patient is heightened thereby. It reminds me of an incident when I was in the hospital in Baltimore, a patient came down with piles and it turned out to be cancer, and the physician said: "He told me he had piles, and he looked like an honest man."

DIAGNOSIS AND TREATMENT OF ECTOPIC PREGNANCY—REPORT OF CASES.*

By Wm. C. Gewin, M.D.,
Birmingham, Ala.

Ectopic pregnancy, i. e., misplaced pregnancy, meaning a condition in which the female ovum becomes arrested and impregnated outside of the uterine cavity, is a better term than the term extra-uterine pregnancy, because the ovum may be arrested and fecundated in the portion of the tube that passes through the wall of the uterus, or conception may take place in a rudimentary horn of a bicornuate uterus, and thus not be a truly extra-uterine pregnancy. However, such exceptions are so rare that nearly all cases of ectopic pregnancy are of the tubal variety, and it is to this variety especially that this paper is directed.

This is a grave condition no matter at what stage it may be recognized, and every physician who does any obstetrical work should endeavor to become proficient in the diagnosis of ectopic pregnancy in all its varieties and phases.

The diagnosis of ectopic pregnancy may be made: (1) Prior to rupture; (2) at the time of rupture; (3) during the secondary development of the fetus.

Diagnosis prior to rupture: The diagnosis of uninterrupted ectopic gestation is rarely made before rupture, because the early signs of pregnancy usually exist and are very similar to those of normal pregnancy. On the other hand, women in apparently perfect health have died of acute hemorrhage from a ruptured tubal pregnancy unaware that pregnancy ever existed. Thus, we are reminded that to diagnose ectopic pregnancy before rupture is frequently very difficult and at times impossible. In ectopic gestation the changes in the breast, skin, nipples, nervous and circulatory systems and gastro-intestinal tract may be the same as those of normal pregnancy, and are subject to the same variations. These changes are, however, less pronounced. There is usually a cessation of menstruation for one or two weeks, and frequently vague pelvic pain and uneasiness during this time, after which there is a return of the menses. The bleeding is profuse, and attended by more or less pain. The discharge is most often mixed with threads of decidual tissue and the clinical picture of an ordinary abortion may be present. For the time being this is often misleading,

*Read before the Jefferson County Medical Society, Birmingham, Ala.

and until the uterus has been cleared of all debris a differential diagnosis cannot be made. The pain in this condition is usually the most characteristic symptom present. It is extremely sharp and cramp-like in character, occurs periodically and is generally reflected down the leg. Irritation of the bladder, and constipation are common symptoms as in normal pregnancy. The blood vessels in the broad ligament of the affected side pulsate with greater force than those of the opposite side. Softening of the cervix and enlargement of the uterus are present. The enlargement is not so marked as in normal pregnancy, and is most noticeable in the long axis of the uterus. If the pregnancy is not interrupted by rupture, and the ovum continues to develop, enlargement of the abdomen, fetal movements, and fetal heart sounds will be present.

Conditions that most closely simulate ectopic gestation are: Incomplete abortion; normal pregnancy with a growing tumor on one side of the uterus; pyosalpinx with an indefinite history of pregnancy; uterine myomata, and retroflection or retroversion of a gravid uterus. Where a differential diagnosis cannot be made in a case in which there is strong evidence of ectopic gestation such a suspicion can almost invariably be confirmed by making an opening in the posterior vaginal cul-de-sac, through which the uterine adnexa can be outlined with the finger. This is not a difficult procedure, and is almost entirely devoid of risk if done under strict aseptic precautions.

Diagnosis at the time of, or immediately after rupture: Rupture may be: (1) Into the peritoneal cavity, or (2) between the layers of the broad ligament.

Rupture into the peritoneal cavity: The signs and symptoms previously mentioned, together with a history of sudden and severe abdominal pain, often of a tearing or agonizing nature, with intense collapse, increasing pallor, feeble and rapid pulse, and subnormal temperature. Such conditions should arouse [illegible] of ruptured pregnancy. If seen a few hours after rupture has occurred dullness in the lower part of the abdomen may be found, due to the accumulation of clotted blood in this region. If bimanual examination reveals the presence of a hematoma or hematocele with tubal enlargement, a tentative diagnosis may easily be made, as pelvic hematoma and hematocele are usually due to ectopic gestation. The uterus may be pushed to one side, or the mass may surround the rectum and bulge into the vagina. If the hemorrhage continues the pallor increases, the voice becomes feeble and the sight dimmed. "The patient becomes restless, often sighs deeply, and exhibits other signs of weariness, and if left untreated gradually sinks, maintaining a perfectly clear intellect to the last." Rupture into the peritoneal cavity is a very fatal occurrence, death resulting in the majority of cases within twenty-four hours unless prompt surgical treatment is instituted.

As has already been mentioned, ectopic pregnancy may occur without any of the signs of ordinary pregnancy; and in making a diagnosis of ruptured tubal pregnancy we must take this fact into consideration.

Rupture between the layers of the broad ligament: In rare cases rupture may take place between the layers of the broad ligament, which is also known as extra-peritoneal rupture. In extra-peritoneal rupture the severe symptoms just described are not present. The fetus may continue to develop and the patient may never suspect that anything has occurred. Between the two extremes there are all degrees of severity; usually a limited hemorrhage occurs, with but slight symptoms of shock or hemorrhage.

The resulting hematoma may cause pressure on the bladder or rectum and result in vesical irritability or constipation. The broad ligament is distended and may be felt bulging into the vagina; the uterus is usually pushed to one side. If the fetus dies within the tube a hematoma-salpinx or other form of tubal disease results.

Diagnosis during secondary development: In addition to the symptoms already mentioned there will be increasing size of the abdomen from a growing mass situated either on one side or behind the uterus, in which the extremities of the fetus may be outlined; also there will be present fetal movements, fetal heart sounds, and other indications of advancing pregnancy.

Treatment: The treatment of ectopic pregnancy is essentially operative and may be considered under the following heads: (1) Before rupture; (2) at the time of rupture; (3) after rupture.

Before Rupture: If the physician is so fortunate as to recognize ectopic pregnancy before rupture, immediate operation is indicated. The operation is simple and is attended by no more danger than an ordinary salpingo-oophorectomy, and consists of the removal of the entire sac and its contents, and most often of the tube and ovary of the affected side. This is much less dangerous to the patient than a continuation of the abnormal pregnancy.

At the Time of Rupture: There is a difference of opinion as to the proper management of a case of tubal pregnancy at the time of, or immediately after, rupture, with the concensus of opinion on the side of immediate operation. It is a well-authenticated fact that in some of the cases in which rupture of the sac has occurred recovery took place without an operation. However, we do know that patients in this condition frequently bleed to death, and that there is no way of determining whether secondary hemorrhage will take place; and I believe the situation entirely too perilous to trifle with. Even though there may be profound shock, immediate operation should be done, and at the same time measures for restoring the circulation instituted and carried along as the operation proceeds. Either intra-venous injection of normal salt solution, or direct transfusion of blood may be done simultaneously with the operation. It appeals to me as being unwise to wait for reaction, as it is possible that reaction may superinduce secondary fatal hemorrhage. The collapse of the patient is due more to hemorrhage than to shock, and it is in accord with the general principles of surgery to arrest the hemorrhage at the earliest possible moment. In extra-peritoneal rupture immediate operation is not so imperative as in the intra-peritoneal variety, but in this condition operation eliminates further risk, and the patient is generally in much better condition for operation than in the intra-peritoneal rupture. Rupture usually takes place before the twelfth week, and the sac and contents with the tube may easily be removed. Hemorrhage usually stops as soon as the proximal and distal ends of the ovarian artery are ligated. Ligation of the artery at the pelvic wall and at the cornu of the uterus may be done preliminary to the removal of the products of conception. The tube is ligated on the proximal side, the sac and contents removed, the large clots cleared away, the abdomen filled with salt solution, and the wound closed.

After Rupture: If the patient survives and immediate operation is not done, one of two conditions will be present—a destroyed or a developing ectopic pregnancy. In the first instance, it is possible that the products of conception might be absorbed ultimately and spontaneous cure take place, especially if rupture occurs during the early months of pregnancy. Cases are on record in which a dead full term fetus has been carried in the abdomen for years without being fatal to the mother. This, of course, is the extraordinary exception, and we should not lose sight of the fact that by non-interference we are subjecting our patient to the various dangers incident to the presence of a putrefactive foreign body in the abdomen. Even though the products of conception and the blood clots might eventually be absorbed without producing any acute condition, the woman might be an invalid for months before absorption was finally complete, depending upon the stage of pregnancy and the amount of hemorrhage at the

time of rupture. In cases in which considerable time has elapsed between the time of rupture and the time at which the surgeon is consulted, some men advise draining through the posterior cul-de-sac, as the blood collection is in the most dependent part of the abdominal cavity, and is walled off from the general peritoneal cavity; but if the collection is large that is not satisfactory, as the fluid is not only in the posterior fornix but in the vesico-vaginal space as well, and is not easily drained in this way.

As regards the management of a developing ectopic pregnancy after rupture of the sac, it is sometimes a very serious question as to just how is the best way to deal with it, especially if it has advanced longer than four months. The difficulties of removal are much increased; also the question of the child's rights enters into consideration, but as we are dealing with an abnormal condition, which is very hazardous for the mother, and offers but very little chance for the child, I think its rights barely, if at all, deserve consideration, and should promptly be disregarded so far as influencing our judgment in the management of the case. The fetus of an ectopic pregnancy is often defective in development or deformed, and I do not think it a humanitarian act to attempt to promote the interest of such a poor prospect at the expense and increased peril of the unfortunate mother. If we have sufficient reason to believe that the fetus is near the age of viability, a brief period of waiting may be in order, and might entail but little additional risk for the mother. If pregnancy has advanced beyond the fourth month, uncontrollable hemorrhage is likely to occur when the placenta is removed. To avoid this it is best to open the sac, remove the fetus, ligate the cord, and suture the sac to the abdominal incision. The cord is allowed to protrude through the opening, and the sac is packed with gauze. After four to six days the gauze is removed, under anaesthesia if necessary, and the placenta is removed without much risk of hemorrhage. Some operators allow the placenta to come away spontaneously.

REPORT OF CASES.

Case No. 1.—A patient of Drs. Carmichael and Carmichael was referred to me on July 13, 1914, with a diagnosis of ruptured ectopic pregnancy. The patient entered the Birmingham Infirmary about 10 a. m., and upon examination the following facts were ascertained: She was 29 years of age; married; had seen her period the last time on May 1, 1914. Gave a history of all the symptoms of pregnancy; nausea, enlargement of the breast and abdomen, etc. She had enjoyed good health all her life until about three years ago, when she was taken sick suddenly after having missed her menstrual period four or five weeks. Dr. Carmichael, who visited her at that time, found her in a condition of collapse, but in a few hours she regained her normal condition, or almost so, and in about twenty-four hours from the time he first saw her she began having a uterine discharge with some clots and pieces of membrane. At that time he diagnosed the case as one of tubal pregnancy, with rupture into the cavity of the uterus. Between that time and May 1, 1914, she became pregnant and carried the child to full term; had a normal delivery of a child weighing about 9 or 10 pounds. Otherwise the family history was negative. At our examination at 10 a. m., July 13, 1914, at the infirmary, we found the right side enlarged, the abdomen distended all over, and evidence of severe hemorrhage. Pulse between 160 and 170, greatly shocked and practically unconscious. We began stimulations immediately and the patient made some improvement. One hour after admission she was carried to the operating room, a hypodermoclysis and proctoclysis of normal salt solution were given prior to administering the anaesthetic, and were continued throughout the operation. The anaesthetic was given by Dr. J. N. Carmichael. Owing to the patient's extreme condition she did not take the anaesthetic very well at first. With the assistance of Dr. W. M. Carmichael the abdomen was then prepared as for any other laparotomy. A median incision was then made into the abdominal cavity, which was filled with blood, some of which was coagulated. Passing the hand down, the right tube was caught between the fingers to prevent hemorrhage. The same was then clamped. A two-months-old fetus was found loose in the abdominal cavity, and this, with a large quantity of blood, was removed, which cleared the operating field. The fact was disclosed that the tube had ruptured midway. The tube was removed, the

cavity cleansed more thoroughly, and a normal saline solution was used to wash the cavity, a small quantity of which was allowed to remain in the abdomen. Upon examination of the other tube, it was found to be normal. The peritoneum was closed with running catgut suture, and the other layers were closed with through and through silkworm stitches. When the operation was finished the patient's condition was found to be somewhat better than when the operation was begun. She was then put to bed. Warm bottles, camphorated oil p. r. n., morphine p. r. n., were ordered, and the patient treated as in any other laparotomy. She began to improve immediately and left the hospital in two weeks, making a complete recovery.

Case No. 2.—A patient of Dr. Walter A. Weed; 23 years of age; married; family history negative; had never had any children. She was admitted to the Birmingham Infirmary, April 9, 1914, with a diagnosis by Dr. Weed of ruptured ectopic pregnancy. She gave a history of having seen her period the latter part of December, 1913, and had experienced all the symptoms of pregnancy. This lady presented a distinct enlargement of the left side just over the tube, and was very rigid over the entire abdomen. She was in a state of shock, with rapid pulse and deep breathing; appeared listless and seemed as if under the influence of some opiate, which had been administered prior to her admission to the hospital. An immediate operation was suggested. The patient was carried to the operating room, hypodermoclysis instituted and continued throughout the operation. Gas-oxygen was administered by Dr. R. G. McGahey, and with the assistance of Dr. Weed, the abdomen was then opened in the median line. Passing the hand down through a large quantity of partially clotted blood, the tube was caught with the fingers, both ends of which were clamped to control the hemorrhage. The abdomen was cleared of clotted blood, and a three-months fetus was found free in the abdominal cavity. The placenta was still attached to the tube. The tube was ligated close to the uterus. Other ligations were made, and the tube and placenta were removed in toto. The left ovary was left, as were the right tube and ovary, which were found to be normal. The cavity was then washed out with normal salt solution, some of which was left therein. The peritoneum was closed with running catgut sutures and the abdomen with through-and-through silk worm gut. The patient was put to bed and the following orders given: Cracked ice, morphine gr. ¼ p. r. n., camphorated oil 5 to 10 minims p. r. n., and the proctoclysis of normal salt solution, or tap water continued. The patient's condition rapidly improved and she left the hospital in ten days, making a complete recovery.

In conclusion, I wish to say that no doubt exists in my mind as to the proper treatment of ectopic pregnancy. It is strictly a surgical condition from the moment of its inception. Consideration for the interest of the child should have no influence in determining the time or method of operation.

THE POST-OPERATIVE RESULTS IN NINE CASES OF GASTRO-ENTEROSTOMY, WITH ONE CASE IN WHICH MORE THAN TWO-THIRDS OF THE STOMACH WAS RESECTED FOR CANCER.*

By Gaston Torrance, M.D.,
Birmingham, Ala.

The following cases have all been operated on within the past six years:

Case 1.—Perforating gastric ulcer; closed by suture; no-loop gastro-enterostomy; operation six years ago.

This patient was seen about an hour after perforation, and gave the following history: She had eaten a hearty meal eight hours before, and had been out for a walk of three or four miles, and came home feeling better than usual; she attempted to lift a suitcase of books weighing about fifty pounds and immediately felt a soreness in the epigastrium; about ten minutes later she felt a sudden, sharp pain, instead, in that region, and vomited, and had a severe rigor; no blood in vomitus.

The following is the history previous to perforation: Mrs. K., age 29; says she has had digestive trouble since she was 12 years of age, and at times she had severe pains in the epigastrium; has always had ulcers in her mouth. Has three children; had some gastric trouble after the birth of the first child seven years ago, and has not been at all well since the birth of the last child, which is seven months old.

*Read before the Chattahoochee Valley Medical and Surgical Association, at West Point, Georgia, July 15, 1914.

For the past three months she has had more digestive trouble than ever before; large ulcers in her mouth; sour stomach, and has taken soda to relieve it; there has been considerable gas distension; pain from one to three hours after eating, and worse in the evening after dinner; no vomiting; there has been a continuous soreness, and she has been unable to wear her corset for two months; constipated, and has lost about ten pounds in weight.

When I first saw her the pulse was 96 and temperature normal; there was market tenderness and pain over the epigastrium and considerable rigidity of the recti muscles.

I made a diagnosis of a perforation at or near the pylorus, and advised immediate operation.

The white blood count was 15,000 three hours after perforation, her pulse 120, and temperature 101 Fahrenheit.

Operation three and a half hours after perforation; ether; median incision above navel; as soon as the peritoneum was opened the contents of the stomach were ejected through the wound, the perforation coming into view at once; this was a round, punched out ulcer about the size of a lead pencil located over the pylorus; the tissues around the ulcer were very much indurated for half an inch or more, and I was compelled to go beyond this area before getting the perforation closed, and this narrowed the pylorus so much that a gastro-enterostomy became necessary. Mayo's posterior no-loop operation was done; one drain was introduced beneath the liver and another into the pelvis through a stab wound. She left the table in good condition, and made an uninterrupted recovery.

She has had better health since this operation than at any time since maturity.

Case 2.—Rupture of the gall-bladder; severe hemorrhage from gastric ulcer; posterior gastro-enterostomy; excision of the gall-bladder and appendix; operation six years ago.

The patient, a male 58 years of age; was seen the day before operation, and the following history was taken:

He had had more digestive trouble at times for the past twenty years; for the past year has had an attack of acute indigestion on an average of about once a month, has severe pain in the epigastrium lasting from two to three hours, with nausea and vomiting, has never vomited blood, has considerable gas distension with sour stomach and water brash, has lost 15 to 20 pounds in the past year, due chiefly to a restricted diet and confinement. No enlargement of the stomach; some tenderness over the pylorus, no tumor; some tenderness over the gall-bladder; slight icteroid color of the skin; conjunctivae slightly yellowed for the past few days, and he has been very much depressed during this time; pulse 60 and rather tense; other organs negative.

While straining at stool, he experienced a sudden, sharp pain in the epigastrium, vomited a considerable amount of clotted blood, became more or less collapsed, and continued to have severe pain in the upper abdomen, and was only partially relieved by a hypo. containing 3-8 of morphia.

I saw him two hours later, and made a diagnosis of perforation of the duodenum, and advised immediate operation. His pulse was 110, and his temperature 101 Fahrenheit, and white blood count 14,500. He was removed to the hospital, and operation done four hours after perforation.

Under ether an incision was made in the midline extending down to the navel; some yellowish material was seen to well up into the wound. A careful examination failed to reveal a perforation of the stomach. The gall-bladder was found to be adherent to the transverse colon, and had perforated just at the margins of these adhesions; the gall-bladder was excised and the appendix also, which was found to be fibrous; the wound in the colon closed, and a no-loop gastro-enterostomy was done; a wick drain was passed down to the stump of the cystic duct, and there was considerable drainage on the second day. This wick was not removed for about ten days, when it was found to be practically a mass of bile salts, a long gall-stone, and was causing marked irritation and nausea from pressure on the stomach and duodenum. This was replaced by a small rubber tube, but this had to be removed also, as it caused some irritation. All nausea ceased as soon as the drains were removed, and he made a good recovery, and has been in perfect health since this time.

Case 3.—Chronic ulcer near the pylorus; no-loop gastro-enterostomy.

The patient died about two years later of some intercurrent disease.

Mrs. B., age 33; has had digestive trouble for the past ten years; this came after drinking too much water while overheated, and caused her to faint, probably causing an acute dilatation; she was somewhat relieved by vomiting. Since this time she has had considerable digestive disturbances; pain after eating, which comes on before she leaves the table and usually lasts about two hours; gas distension; palpitation; pain around her heart; gnawing pain in the region of the stomach, recently the pain and soreness in the epigas-

trium has been constant, and is relieved by a little food; she improves for a while and then gets worse again; has lost about thirty pounds in weight in the past six months; bowels constipated.

Operation under ether; through the right rectus muscles; several scars were found on the first part of the duodenum and one on the pyloric portion of the stomach; a no-loop gastro-enterostomy was done; no anesthetic was given after the clamps were applied until we were ready to close the wound. She came off the table in good condition, and made a perfect recovery; was in a wheel-chair and in the sun-parlor at the end of a week. She went to her home in the country soon after, and I did not see her again.

Case 4.—Acute gastric and duodenal dilatation; gastro-enterostomy.

Operation about six years ago; has remained in good health since.

A female, 22 years of age; has always been in good health until about two months ago, when she began to have pain and nausea after eating; some pain in the region of the umbilicus, but most marked in the epigastrium to the left of the mid-line; she presses her hand on this point when she walks; appetite poor; has vomited occasionally; pain begins a few minutes after eating and soon becomes more marked; has been troubled with gas distension and acid eructations; is relieved some by taking soda; has had some palpitation and pain around her heart. She has been in bed for four weeks, and has vomited almost daily; has vomited blood, has had tarry stools; very constipated; has vomited incessantly for two weeks almost as soon as any food is ingested; this contains considerable bright blood at times. There is marked pain and tenderness over the left rectus in the epigastric region; she was kept in the hospital for a week on an alkaline treatment without any improvement, and vomited large quantities of a dark green fluid.

Operation through the right rectus; the duodenum was very much dilated, and there was some dilatation of the stomach; Mayo's no-loop operation was done; she stood the operation well.

On account of the dilated condition of the duodenum, I placed her in bed with the foot elevated; a few days later, this was let down, and she began to vomit again; the foot of the bed was again elevated, and her stomach was washed out daily for three or four days, when all vomiting ceased, and she soon began to take food and made a rapid recovery. She has been seen a number of times in the past few years, and seems to be relieved of her trouble.

Case 5.—Mrs. P., age 22 years; has had more or less digestive trouble for three or four years; gas distension, nausea and vomiting; pain after eating; very nervous, neurasthenic); no children. For the past month has been confined to bed most of the time; unable to eat and vomiting almost constantly; some emaciation.

Operation in May, 1908; ether anesthesia; indurated ulcer near the pylorus; Mayo's no-loop operation.

She made an uninterrupted recovery, and has been in perfect health ever since; has gained twenty-five or thirty pounds in weight; has given birth to two children within the past four years.

Case 6.—Mrs. J., 26 years of age; the mother of one child; has been under treatment for indigestion for two years or more; considerable gas distension, sour stomach, and pain from one to two hours after meals. Four months ago she had an attack of gall-bladder colic, and was only relieved by several hypos of morphia, but was tender over the region of the pylorus for about a week; this cleared up, and she seemed quite well and gained some in weight until about a month ago, when she had more pain and soreness in this region; the soreness did not disappear, and she has scarcely been able to eat anything for a month. There is some nausea.

Operation in April, 1913, under gas-oxygen anesthesia. The gall-bladder was drained and found to contain a thick, tarry bile but no stones. A thickened, indurated mass was found to almost occlude the pylorus, and a no-loop gastro-enterostomy was done. Her recovery was as smooth as in the average interval appendix operation, and she was eating almost anything she wanted three or four weeks after operation, and has been in perfect health ever since.

Case 7.—Mrs. Z., 57 years of age; has had some digestive trouble for 15 or 20 years; gas distension and sour stomach, heartburn, and at times has had severe attacks of pain (cramps), with vomiting. Two months ago she began to have severe pain in the upper abdomen, and noticed a mass about the size of an English walnut in this region; has had several attacks of pain daily, and has been quite tender constantly. When palpating the mass gas can be forced through with a gurgling sound. Has been on a liquid diet for three weeks, and has been in bed most of the time. Has been very much nauseated for the past two weeks, and has had but very little nourishment. Has had tarry stools at times. The X-ray picture shows the outlines of a tumor which contracts the pylorus, which appears as a small drawn-out tube.

Operation under gas-oxygen. October, 1912.

When the stomach was drawn out it was found to contain a large indurated mass, and more than two-thirds of the body of the stomach was also indurated; none of the glands in this region or in the pelvis were enlarged, and we decided to do an excision. The whole of the indurated portion of the stomach was removed, and an anterior gastro-enterostomy was done, as the remaining portion was so small that we were unable to reach the posterior part. She left the table with an increase of only ten beats in her pulse and no shock; she vomited a little for 24 hours; she was given cracked ice at once and broth on the second day; she was up in a wheelchair on the 8th day, and went home at the end of three weeks in better condition than when she came to the hospital. She returned to her home in Florida two months later. She takes food frequently in small quantities but seems to digest normally. Recent reports from her state that her health is better than it has been for several years.

A section was cut from the pylorus and examined by Dr. McLester, who reported it to be carcinoma.

Case 8.—W. M. B., male, age 54; referred by Dr. McWhorter, of Riverton, Alabama. Family negative, except that his father was supposed to have died of a malignant tumor of the stomach at 57. General health has always been good up to six or seven years ago, when he began to have some digestive trouble, sour stomach, gas, and acid eructations; has used soda almost constantly. Has been under heavy business strain for the past several years. Digestive trouble has been worse for the past four years. I saw him three years ago, and made a diagnosis of gastric ulcer. Has had a great deal of trouble for three years; pain two or three hours after meals; relieved by taking soda and by vomiting. His condition improves for two or three weeks, and then gets worse; vomits blood during these attacks, and has tarry stools; very much constipated, and this has been worse for four or five months; has lost about fifty pounds in weight.

On admission to the hospital he was very much emaciated. He was put on a diet for about a week, but did not improve, and operation was decided upon.

Under gas-oxygen an incision was made through the upper part of the rectus; a large indurated ulcer the size of a silver dollar was found on the lesser curvature encroaching upon the pylorus; the surrounding tissues were much thickened and indurated, and some enlarged glands were found around the pylorus. Resection of this part of the stomach was considered, but we decided to do a gastro-enterostomy and do the excision later, if we found it to be necessary (a microscopic examination of the glands was negative).

He made a rapid recovery and did not have any more discomfort. He is reported well, and continues to take on flesh and strength.

Case 9.—Male, 42; stomach trouble began fifteen years ago; sour stomach, belching, gas; pain through chest to back; pain about two hours after eating; wakes up about two or three o'clock with pain in his abdomen; spits up his food; has a burning sensation with nausea; constipated. Has lost thirty pounds in past two years. He had a suspicious lesion thirty years ago, and about three or four months ago was given saevarsan. A bismuth meal was given, and marked contractions of the stomach were noted with the fluoroscope as is found in ulcer beyond the pylorus; some ptosis of the stomach.

Under ether the stomach was exposed through the rectus muscle, and an ulcer and an indurated mass were found just beyond the pyloric ring. A posterior no-loop gastro-enterostomy was done, and then the pylorus was excised.

He made a smooth recovery, and has been able to take and digest his food well, has gained some flesh, and seems to be relieved of all his old symptoms.

AUTHORS' ABSTRACTS.

Surgery, Gynecology, Obstetrics and Genito-Urinary Diseases.

The Operative Reduction of Fractures Without the Use of Buried Retention Material. By Hermann B. Gessner, New Orleans, La. Texas State Journal of Medicine, February, 1915, pp. 403-404.

The author makes no claim of originality for the idea expressed in this paper, but takes up the operative reduction of fractures without the use of buried retention material for the purpose of emphasizing the value of this measure in suitable cases.

After reporting three cases, of which two are illustrated, he presents the conclusion that at least in some fractures of both bones of the forearm, operative reduction with closure of the wound in two tiers and without the use of any buried retention material, gives excellent results, this applying especially to cases whose line of fracture is favorable to easy maintenance of reduction.

Bladder Irritability in Women. By William H. Cary, Brooklyn, N. Y. American Journal of Obstetrics, February, 1915, pp. 59-64.

Bladder irritability per se excludes acute inflammatory conditions of the urinary tract and neoplasms which may be considered as physiological and concerns cases of frequent urination and dysuria in which urinalysis is normal. The

pain and annoyance caused by irritable bladder establishes its importance, and because of its frequency and obscure etiology the author feels that the gynecologist should be familiar with the examining cystoscope.

Chronic trigonitis is stated as the most common cause of bladder irritability, and may be dependent upon hyperacidity of urine, cystocele, traumatism during operation or catheterization and infection. It usually occurs without the history of previous bladder trouble. Instillation of silver nitrate preparations through the two-way catheter is used successfully. Chronic posterior urethritis occurs more frequently than commonly stated. It may be associated with the former condition and is easily diagnosed through the endoscope in the knee-chest position, and is best treated in this manner with applications of strong silver nitrate solutions. Low-grade infections and prolonged periods of eroticism are frequent causes of urethritis. Irritability may arise from any inflammatory lesion about the external meatus. Association with other pelvic lesions is seldom influential in bringing about bladder irritability unless the bladder wall is involved. Irritability may be rarely considered a neurosis. Nephritis, solitary ulcer and tuberculosis of the kidney must be considered as possible causes.

Treponema Pallidum Found at Autopsy in Blood-Stream and Elsewhere in Case of Congenital Syphilis. By H. C. Clark, and I. N. Gates, Ancon, C. Z. American Journal of Diseases of Children, February, 1915.

The chief point of interest presented by this case of congenital syphilis was the fact that a tedious search of a blood smear made twelve hours before death failed to reveal T. Pallidum, yet blood smears from the jugular vein about four hours after death revealed their presence in fair numbers. It would appear that the blood changes near the time of death and for a few hours afterward favored the growth of T. Pallidum.

In spite of the heavy blood-stream infection the dissemination of T. Pallidum throughout the body did not appear in a uniform manner. The liver disclosed the greatest number, then the kidneys, pancreas, skin and lungs in the order named, while the other viscera yielded sparse findings or none at all.

It has been the experience that clinicians and pathologists can often indicate the presence of syphilis in many cases in which it is impossible to demonstrate the presence of T. Pallidum in any of the tissues outside primary and secondary lesions accessible to external examination.

The results obtained in this case are far from the usual results obtained at Ancon in the pathological study of syphilis, either in its acquired or congenital forms.

The case presents another instance in which all conditions conform to Colle's Law.

The Endowment of Motherhood. By John F. Moran, Washington, D. C. Journal of the American Medical Association, January 9, 1915, pp. 122-126.

Moran states that the Census Bureau reports show that of the maternal deaths that have occurred in the puerperal state (pregnancy parturition and lactation) since 1900 the minimum mortality from infection was 39.7 per cent (1906) and the maximum 47.8 per cent (1911), while the general average was 44.8 per cent.

Besides these, thousands more pass to the care of the gynecologists; more than 50 per cent of the infants dying in the first month of life are the results of conditions existing before they were born, or injuries and accidents at birth, and one-third of the blindness in the world is the result of ophthalmia neonatorum.

To what is this mortality and morbidity largely due? Unclean and meddlesome widwifery because of ignorance and carelessness.

Why is the standard of obstetrics in general exempt. If fracture is certain and only one examination is practicable, it should be done after permanent dressings have been applied. The Roentgenologist is probably called upon oftener to determine the merits of a suit for physical damage than any other expert. Both plaintiff and defendant require his services for the support of their respective positions.

The careful Roentgenologist never permits himself to be employed as expert for a fee contingent upon recovery. He immediately becomes a biased witness, and the value of his testimony is minimized. He should never testify without previously fully recalling the circumstances under which the examination was made; otherwise errors due to unusual relative positions may cause great embarrassment.

Haemolysis Following Transfusion of Blood: A Study. By Bertram M. Bernheim, M.D., Baltimore, Md. The Lancet-Clinic, March 6, 1915, pp. 259-264.

Having had two cases (one fatal) of haemolysis following transfusion of blood, and finding little written on the subject from a practical standpoint, Bernheim decided to make a statistical study of the subject. To that end he sent out ten questions, and received twelve answers.

In 800 transfusions there occurred fifteen cases of microscopic haemoglobinuria, an incidence roughly of two per cent, with eleven recoveries and four deaths. In the eleven recoveries tests were made in nine instances and haemolysis prognosticated. There were six fatalities from causes other than haemolysis, four from acute dilatation of the heart and two from questionable anaphylaxis. Of the twelve who answered the question form, seven considered haemolysis to be the chief danger of transfusion, one man volunteering the information that he personally knew of three unpublished instances of exitus from this cause. Three regarded acute dilatation of the heart as the chief danger. Bernheim's personal feeling in the matter is that there are two dangers against which recipients must be safeguarded. The first, or immediate danger, is that of acute dilatation of the heart resulting from an overwhelming of the right heart by a flow of blood whose volume is too great, whose rate too rapid, whose pressure too high. The second, or delayed danger, is that of haemolysis. Bernheim feels that in the emergencies where haste is all important it is quite proper to disregard all tests and allow the recipient to take his chances. With this one exception, it is most im-

portant that haemolytic tests be made prior to transfusion.

Nitrous Oxid Oxygen Anesthesia. By T. C. Burns, Oklahoma City, Okla. Journal of the Oklahoma State Medical Association, February, 1915, pp. 284, 285.

The type of subjects best adapted for this anesthesia are men and women who are not muscular or alcoholic, children over ten years, anaemic patients and those of low vitality.

The respirations, pulse and blood pressure are about normal in nitrous oxid oxygen anesthesia, and post-operative nausea and vomiting eliminated.

In suppurative cases ether tends to destroy the phagocytic action of the blood, throwing strain on the kidneys, as we obtain anesthesia with ether by its forming a chemical compound in the blood, which require time and labor for the kidneys to eliminate. Nitrous oxid oxygen gives immediate recovery as soon as the mask is removed, as the anesthetic makes no union with the blood, thus giving no irritation to the genito-urinary tract.

We use rebreathing in this anesthesia to retain carbon dioxid, which stimulates the respiratory center, increases the absorption of nitrous oxid and maintains the carbon dioxid content of the blood, preventing acapnia.

Nitrous oxid oxygen should be given only by one trained in the work, as the patient becoming quickly cyanotic demands prompt action and experience on the part of the anesthetist. Cyanosis, under nitrous oxid, means suboxidation of the blood, not cardiac depression, and is quickly relieved by small amount of oxygen.

Advantages of nitrous oxid anesthesia are:

1. Rapid action.
2. Elimination of unpleasant sensations, and excitement stage, as in ether.
3. Rapid recovery.
4. No post-operative nausea and vomiting.
5. Absence of pneumonia, nephritis or blood changes.
6. Lack of dread for future anesthesia.

Anoci-Association in Theory and Practice. By A. B. Cooke, Los Angeles, California. Southern California Practitioner, January, 1915.

In its final analysis surgical shock is closely analagous to the condition we know as physical fatigue and exhaustion. In fact, exhaustion of the brain cells and centers is shock. The only function, so far as we know, possessed by the brain cells connected with sensory nerve fibres is to liberate impulses which result in voluntary muscular contraction. Continuous or too often repeated functioning, as in the case of an extensive surgical operation must ultimately mean loss of power and deterioration of the cells involved. This occurs to some extent in every surgical operation. The brain cells are in no sense protected by general anesthesia. As a matter of fact, general anesthesia accomplishes only two useful ends, namely, it produces unconsciousness and it abolishes the power of voluntary muscular action.

The only means by which the brain cells may be protected from the harmful impression originating in the area to be traumatized is by **locally** anesthetizing sensory nerve endings and tracts. This is perhaps the most important of the several principles underlying the practical application of anoci-association, and the one most often to be charged with failure by those who attempt it. To accomplish its purpose the local anesthesia must be as complete and perfect as though no general anesthetic were to be employed. Failure on this score is properly chargeable to the operator, not to the method.

My personal experience with the method now embraces more than two hundred cases covering a wide range of different conditions and operations.

Penetrating Wounds of Abdomen and Thorax. By A. P. Butt, Davis, W. Va. The West Virginia Medical Journal, February, 1915, pp. 260-264.

The writer expressly omits wounds of the heart and pericardium. He admits that the subject should be obsolete. Some more or less standard methods of treatment should have been adopted years ago, but claims that such is not the case.

He believes that in the great majority of thoracic wounds expectant measures are all that are required.

The bleeding tends automatically to stop. Should it not do so Murphy's method of artificial pneumothorax should be tried.

The important thing to remember is that thoracic wounds are often abdominal also.

In wounds of the thorax the writer favors "watchful waiting." In abdominal wounds, "armed and immediate intervention."

He urges that symptoms be ignored, and that an immediate operation be performed in any case of suspected penetration.

A small incision, a slight scrutiny, the introduction of a sponge to the most dependent parts, will almost always settle the question as to whether there are wounded viscera.

Advises drainage in most cases.

Conclusion—1. Do not operate in thoracic wounds unless they are progressively getting worse. By far the most of them will recover under expectant treatment; 2. Operate all abdominal wounds.

A New Incision for Varicocele Operation When the Scrotum is to Be Amputated. By E. G. Ballenger and O. F. Elder, Atlanta, Ga. Medical Record, February 27th, 1915, p. 355.

When it is desirable to amputate the scrotum and operate for varicocele at the same time the scrotum may be drawn up so that the incision through which the varicose veins are to be removed is made through the lower part of the scrotum which is to be amputated. The scrotal clamp is then applied above the incision and the scrotum amputated as usual. In this manner the amputated part of the scrotum contains the incision made for the varicocele and saves the time required to close this wound. While the varicocele might be removed through the incision made in amputating the scrotum, this would be more complicated, much more bloody, and more likely to become infected than if performed as suggested.

RAILWAY SURGERY

THE CENTRAL NERVOUS SYSTEM IN ITS RELATION TO CERTAIN TRAUMATIC AFFECTIONS.*

By J. N. Baker, B.A., M.D., F.A.C.S., Montgomery, Alabama.

Gross and palpable lesions of the central nervous system, such as fractures of the vault of the cranium, at the base of the brain or of the vertebral column, will not here be discussed; nor will violent insult done the sympathetic system, through crushing and mangling injuries, manifesting itself in the classical symptoms of shock, receive attention.

What is particularly desired is to call attention to the very important fact that there may exist in any patient, who has been the recipient of a trauma, some derangement of the central nervous system; this derangement may be functional or it may be organic; yet it behooves the surgeon to carefully scrutinize every case in which the physical findings resulting from the injury do not serve to explain fully all the symptoms complained of.

There is now complete unanimity of opinion that there exists no such thing as a *special* neurosis excited by trauma. *"Traumatic neurosis"* and *"traumatic neurasthenia"* are complete misnomers; the condition is purely psychogenetic and the nervous syndromes presented in such cases differ in no wise from those found in persons who have been subjected to no trauma whatsoever. These are facts which have been well proven and which now rest on solid ground; yet it required many years of close and arduous study to explode the hypothetical theories promulgated by the great surgeon, Erichsen, who sought to explain the horde of symptoms manifested in these cases by a disarrangement of the molecular structure of the spinal cord, thereby resulting in alterations of blood supply (anemia-hyperemia) sufficient to produce palpable clinical symptoms.

While the above statements are now incontrovertible and are accepted by all neurologists, the railway surgeon should not lose sight of other important facts which in nearly every incident are prone to insinuate themselves for a large degree of consideration.

The elements of *fright* and *terror* are inborn in every animal and are the most primitive and elemental of all emotions. That this is true has been shown by Pawlaw, who, in his experiments with dogs, was able to completely suppress the flow of gastric juice by the mere display of a whip. Crile was able to actually produce death in rabbits by means of fear aroused in them by dogs.

Then, too, ours is a work-a-day age; an age of hustle and of hurry, with an insatiable mania for speed, an age in which the general tendency is to hold some one responsible for every happening; that these statements are likewise true will hardly be gainsaid by anyone who has ever been in attendance at a railway wreck.

Is there small wonder, therefore, when a locomotive, speeding along its midnight trail, suddenly encounters some unforeseen obstacle and violently deposits its human burden into a deep ravine below, that those present who have actually escaped physical harm, upon viewing the suffering of the maimed and the mangled, should sooner or later develop any variety of imaginary ailment, which only the courts and the ambulance-chasing lawyer can heal?

This is but an outgrowth of the age in which we live, fostered by the unscrupulous lawyer, the conscienceless doctor, and the greed of the patient for filthy lucre.

The above little sketch is not overdrawn; it is an everyday occurrence, as we all know,

*Read before Southern States Association of Railway Surgeons, Auxiliary to Southern Medical Association, Richmond, Va., November 9, 1911.

and is used for the sole purpose of pointing the moral that we, as the medical exponents of the companies which we serve, should carefully study these cases and should handle them with the utmost tact and skill.

The *neuroses*—both the *psycho* and the *actual*—are notoriously on the increase; should one ask for substantiation of this statement, no better proof could be had than that manifested in the marvelous growth of Christian Science and the various other cults, which in recent years have sprung into existence and which find a suitable and fruitful pabulum in those minds harassed by obsessions, phobias, doubts and other obliquities. Our own profession, up to now, has been woefully lacking in devising measures for successfully coping with these disorders, and this fact may in itself serve to explain in a large measure their very existence—following the usual law of supply and demand. The true keynote, however, of this success is to be found in a realization that it was the *psyche* and not the *soma* which needed adjustment and that these cults were quick to grasp this fact. The patient was suffering, not from a *sore body* but from a *sore mind*. The scientific physician, by virtue of his training, is prone to approach every problem from a material standpoint and to make its solution a tangible and visible entity—hence the tardiness in the solution of the various forms of functional nervous diseases. Now the mist is fast clearing; hysteria, neurasthenia and the various neuroses of supposedly traumatic origin belong to a class in which the *psyche* predominates, not the *soma*. Consequently, in the handling of many of these cases the problem is one rather for psycho-therapy than for practical surgery.

It is a familiar fact that mail clerks are very prone to develop supposedly intangible injuries to their backs whenever a derailment occurs or any other accident happens to a moving train. Why? They are in the employ, not of the railroad company, but of the United States Government, and their salary continues during the period of disability.

Let me briefly cite the following case:

Mr. H., mail clerk on an Atlantic Coast Line train, which became derailed, the front end of the mail car only getting off the track. He was brought to Montgomery on stretcher; I met the train, and after a cursory examination, informed him that he would be taken directly home in the ambulance. His reply was that he would hire his own conveyance and his own doctor. The following day I made a more careful examination but could find no visible evidence of trauma, though he complained of much pain in the back. He remained off for several months and then presented a certificate from "his doctor," setting forth that he had sustained a ruptured kidney and a violent twist of his spine, and incidentally asking $25,000 damages. It was ascertained that some time previously he had been treated for an acute prostatitis, cystitis and stricture of Neisserian origin. He was informed that this evidence would be brought out in court to prove the origin of any blood he claimed to have passed, whereupon he consented to the adjustment of his claim for a nominal fee.

The possibility of the existence of an *organic* lesion of the nervous system in any patient who has been the recipient of a trauma is not to be lost sight of. Locomotor ataxia, for instance, may exist for years—ten, twenty or even thirty—without seriously impairing the general health; just how long it may exist in what is known as the pre-ataxic stage has not been definitely determined, but certainly for a considerable length of time. That the early symptoms of tabes are frequently overlooked is a fact of common experience. We should remember that the disease is one of the commonest of the chronic degenerative changes of the central nervous system, and that, inasmuch as it may remain dormant for so long a time, special care should be exercised to rigidly exclude its presence from every case which on its surface appears puzzling. Learn to look for that trinity of symptoms—the Argyll-Robertson pupil, the absence of the knee jerk and the Romberg sign—which, if present, will always lead one aright. Should there be doubt as to the possibility of a spinal cord lesion, a Wassermann test should be made, both from the blood and from a

spinal tap. The confusion and haziness which formerly hovered about the etiology of many nervous diseases have now melted away since the clear bright rays of sero-diagnosis have been thrown upon them.

A Charcot joint has more than once brought disrepute for the surgeon and endless trouble for the company. A tabetic who has sustained a fracture may complain of very little or no pain at all at the time the injury is received, and the disablement and discomfort ofttimes are very slight. These are diagnostic points of prime importance and should never be lost sight of by the surgeon. These fractures may heal fairly well, apparently, but when subjected to much stress or strain they are almost sure to give way. It is a good rule always to look for a luetic taint where fractures, after a proper reduction, refuse to unite, or if united, refuse to bear weight.

The point, then, to be stressed in this connection is this: Every case of tabes or every case of supposed or actual trauma occurring in a tabetic, has back of it a syphilitic etiology which must receive its due and proper consideration.

Epilepsy is probably the most frequent of all affections of the higher nervous system. It is estimated as occurring in one of every five hundred of the population. The question as to the etiology of epilepsy, whether it be of traumatic or of idiopathic origin, need not be considered. The important point here involved is as to whether the *status epilepticus* exists in any given case which may have received an injury. The marked instability of the higher centres, together with the progressively increasing failure of the mental faculties in all epileptics is a fact of common knowledge, alike to the medical man and to the layman. Hence the establishment of such a state, if its exists, is a point well worthy of consideration.

The following case nicely illustrates how important a part such a condition may play and also shows the value of carefully analyzing the past history of every case.

Mr. B., age 32, was employed by a cotton compress as night watchman; while making his rounds he stepped into a hole in the platform of the compress and sustained a slight abrasion of the skin just below the left knee. I saw him about two hours after the accident and found the condition as stated above. He was instructed to remain quiet for a day or so, and to report again if he had any further trouble. Nothing more was heard from him for several months, when I was again requested by the company to re-examine this man. During the interval which had elapsed between the reception of the injury and the second examination, he had gone to the country on a visit, as he was still unable to use the limb; while there he procured the service of a country physician, who told him that he had a synovitis of the joint, put him on crutches and proceeded to blister the entire area surrounding the joint. From this time on he was totally unable to use the limb or to move the joint at all; any effort to produce passive motion elicited intense suffering and the joint was rigidly fixed, as if completely ankylosed. Being familiar with the original injury, I insisted that he be given ether in order to test the exact extent of joint involvement. As soon as he was completely anaesthetized, the joint could be moved as readily and as freely as the other, which, to the country physician who was present, was a little surprising. My diagnosis was an hysterical joint, and before he left the hospital he had a typical epileptic seizure. In less than three months he was dead, death having followed immediately upon one of these attacks. The history of this man, subsequently obtained, showed that he had been an epileptic for some years.

There are other, though rarer, affections of the nervous system which might be considered, yet on account of their rarity need not be brought within the compass of this brief paper.

Theodor Kocher, probably the greatest living surgeon today, has said: "It is not necessary for the practitioner to act surgically, but it is imperative that he should learn to think surgically."

Let us so mutilate this thought as to have it read: "It is not necessary for the surgeon to act neurologically, but it is imperative that he should learn to think neurologically."

DISCUSSION.

Dr. Tom A. Williams, Washington, D. C.: Mr.

President and Gentlemen: I think that this paper of Dr. Baker is very much called for, in that he, a railroad surgeon, impresses upon other surgeons the importanec of the psychological factor in these cases. But we must not forget that when we say psychic factor or psychogenetic induction of disease, we do not really mean anything more than a physiological process, for, as a matter of fact, in any psychic reaction an actual change takes place in the energy output of the body, and we only state it in psychologic terms for brevity and convenience. Pawlow, Cannon and Crile have shown very conclusively the physical concomitants of some of the psychic reactions. Clinical experience has shown us how psychic stimuli will cause intense reactions in the difference of the heart beat, extra secretions of various organs and alterations of the metabolism. These are all physical results of psychologic stimuli; so, after all, we are only dealing with medical, physiological facts when we talk about psychological or psychogenetic reactions.

There is a point the doctor made that I would like to supplement: He spoke about the danger of a latent locomotor ataxia causing the symptoms attributed to injury, on the basis of a well-known fact that any kind of shock or hardship or disease would bring to the front or aggravate a lues which is present and perhaps cause the outbreak of a paresis or a tabes. I may say this: that any neurologist who would wait to diagnose tabes until he found the Romberg sign lost deep reflexes, and Argyll-Robertson pupils, would not know his business. Those are all signs of tabes that any one can see. We must diagnose tabes before there is a Romberg sign and before the knee jerk is lost. We do it by the loss of the lower reflexes and the implication of the sensibility, especially when radicular, and the appearance of the bladder, which is often a very easy sign. These signs frequently occur quite a long time before the more familiar signs of the pupil, the knee flex and the Romberg.

After this digression I wish to speak particularly of the nature of the traumatic neurosis. It is purely psychic and can be dealt with psychologically only.

Its pathogenesis is derived from a false notion of the patient which induces depressing emotions which disturb both bodily health and life relations. A clear illustration of the mechanism is that of the "conditioning" of the gastric reflex of dogs by psychological stimuli, whether these are pleasureable or painful. The removal of the extraneous suggestion would remedy any "neurosis" but for the fact that memory maintains its action; so that the mental content must be modified at its foundation, and this requires considerable analysis of the patient's trends. Hence the complete failure of such naive procedures as reassurance and suggestion.

Law suits and malingering, so often interwoven with these cases, have created misunderstandings. But indemnity is not necessarily curative even of the malingerer. A case which lasted seven years after receiving heavy damages is an instance in Washington.

In the complicated case, proper psychological reconstruction, made possible by clear analysis, inevitably cures, as the mechanism of neurotic disturbances after accidents differs in no way from that we find when there has been no accident at all. Furthermore, its nature is not of a complexity beyond the understanding of a layman; so that its principles can readily be grasped when presented in court by an expert witness who really understands them.

The object of treatment is not merely to sidetrack an unpleasant thought or emotion, but to reeducate the patient's tendencies in a fruitful direction which will preclude reactions of disquieting or hurtful kinds. The process can be most satisfactorily accomplished only when the practitioner has analyzed the psychic factors which enter into the disturbance. He does this in order to have an understanding of the mental processes with which he will have to deal in reconstructing the patient's reactions to the surroundings which have initiated or are maintaining his psychosis.

The procedure may be very complex, but in principle it does not differ from the very simple conditioning, reconditioning and deconditioning of automatic reflexes practiced by Pawlow upon dogs in his experiments upon the functions of the digestive glands.

The principle is one of associating with useful activities, which very often means social relationships, the pleasurable feelings for which the patient has substituted some distressing emotion. When this is accomplished there ensues the spontaneous disappearance of the disagreeable feelings which are at the root of the disorder, thanks to a power of storing up impressions in the human cortex in the form of ideas, the constant activation of which may thus interfere with proper social adaptation through their "association" into a painful complex.

The theoretical superiority of this method is amply confirmed practically in my own clinical experience and that of many fellow psychopathologists.

Dr. E. C. Samuels, New Orleans, La.: Only one instance I would like to add—a case of an attempted suit against the city of New Orleans by a lady who was out in a Mardi Gras parade one night, and who claimed that a policeman, in backing the crowd back, deliberately ran his horse on her and injured her foot. She was referred to me about three weeks later by her family physician, Dr. Cerenio, for an X-ray study of the ankle. The ankle was quite swollen at the time and very little pain. I made a stereoscopic study of the ankle joint, including the lower third of the tibia and fibula. To my surprise when I saw the plate the next morning I saw an almost complete destruction of the ankle joint itself—a typical Charcot joint. When the facts were put up to her the suit was dropped.

Dr. Baker closes: Mr. President, I have nothing more to say, except I wish to thank Dr. Williams very much for his discussion. I think we are very fortunate indeed to have the doctor with us.

CASE REPORT.*

By Chas. V. Stephenson, M.D.,
Centreville, Tenn.

I am aware that the usual case report is tiresome and uninteresting.

In reporting this case I do not propose to report anything startling. It is the interest developed in this case and the rather prolonged period before anything out of the ordinary occurred that prompts me to report it.

L. E., age 27, negro laborer, while attempting to board a moving passenger train, was thrown against the journal of a boxcar on the adjacent siding, sustaining the injuries enumerated below: a dislocation of the left shoulder, a simple fracture of the left arm at the surgical neck of the humerus. The most serious injury, and the one I report was a compound comminuted fracture of the skull, depressing quite a bit of both the frontal and parietal bones. The bone was driven in in such a manner that there had been some loss of brain tissue.

This man, being a trespasser, was ordered taken from the railroad right-of-way. He had been placed in a vacant house, which was anything but an inviting place for such work as must of necessity be done, as it had been used as an outbuilding for some time.

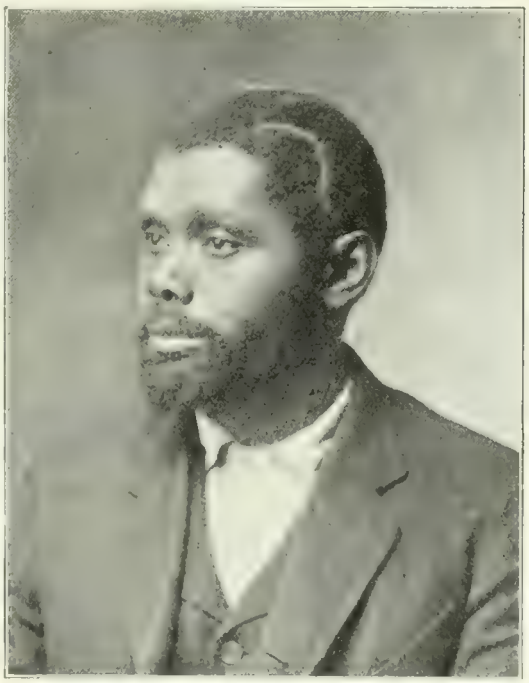
The case appeared hopeless from the start, but at the earnest solicitation of several people I was persuaded to make some effort to relieve the man. It was evident that he could not live to reach the hospital, for he had lost considerable blood, presumably from the anterior branch of the middle meningeal artery, which proved to be torn across by the fracture. Dr. George B. Scott, of Goodrich, Tenn., and my son, who was at that time a medical student, assisted in the operation.

Examination revealed the injuries enumerated above, with the classical symptoms of compression, namely:

An unconscious patient, slow and rather strong pulse (considering the amount of blood lost), contracted pupil, reacting slowly to light, stertorous breathing and right-sided hemiplegia.

The incision was a continuation of the laceration mentioned, made into the classical horseshoe shaped flap. This was raised and the trephine applied to the skull at about ¾-inch behind and about the same distance above the external angular process of the orbit. The button removed and the divided end of the anterior branch of the middle meningeal artery ligated. The bone was then elevated and many small fragments removed from the brain tissue. The dura was sutured and the wound closed and dressed in the usual manner.

The case made a satisfactory recovery and nothing was thought about the matter until about four years after the operation, when he began having, as his associates termed it, "fits." I have not been able to observe one of them, but presume they are of the Jacksonian type. He has since been operated on without beneficial results. I understand that there was done an osteoplastic flap method. The dura was exposed and a few scars removed. It was not necessary to remove any bone except that for the trephine openings. Since the case was not benefited by operation, it aroused my curiosity as to the cause of his seizures.



My object in presenting this case was with the hope that a lively discussion would follow

*Read before Southern States Association of Railway Surgeons, Auxiliary to Southern Medical Association, Richmond, Va., November 9, 1914.

by those who have had much better opportunity of observing the after-effects of brain injuries.

What is the most probable cause of the condition?

Is it pressure from some hidden fragment of bone or dural scars?

Is it likely that another operation would benefit the condition?

Should such people be permitted to remain at large throughout the country or should they not be confined and cared for?

I herewith submit a photograph of this case.

DISCUSSION.

Dr. Thomas H. Hancock, Atlanta, Ga.: I can only report the exact experiences that we have had. A negro was struck by a bridge. It was first thought that he was struck by a brick. I trephined him and could find no lesion whatever discernible by the eye, except two or three months afterwards I operated again and found he had softening of the brain, and he died.

Dr. H. P. Linsz, Wheeling, W. Va.: Mr. President, I believe if I had the chance to do another operation for that fellow I would use the plastic flap by Hudson bone drill, raise your flap and let it down easier. I had a case of a man who was very bad for more than a year. They brought him down from the insane asylum and his folks said, "Doctor, if he is going to die, I would rather see him die under the operation than to go on in this way," and so I operated and he got well.

Dr. J. A. Mitchell, Tullahoma, Tenn.: We have those cases occurring, just as the doctor speaks of, who have had no injuries. They throw these fits. We ask if they have been hit on the head or if they have been in a railroad accident, but if they have had no accident, how are we going to trace it?

Now, this question arises, "Might not he have had some trouble before this?" And I suggest that the doctor put his patient under anti-syphilitic treatment and keep him there, and I think he will improve. I do not think that possibly the accident had anything much to do with it.

Dr. E. T. Newell, Chattanooga, Tenn.: Any man who has been knocked down and rendered unconscious, whether there is a very perceptible fracture of the skull or not, is a very serious case and one liable to be followed by epilepsy. The case of Dr. Stevens' no doubt is an epileptic. So serious are these blows to the head that render a man unconscious that Murphy says that rather than be knocked down and rendered totally unconscious by a blow, he would rather be killed outright, for the reason that he is so liable to have epilepsy later, and then the degenerative changes that this doctor has outlined—insanity and later death. So in all of these cases we should expect and look for serious trouble later on, especially where there was as much traumatism as he had. Of course, what is the exact pathology of this case or the other case we cannot always tell. In some cases exposing the dura, removing the spicule of bone and taking off some of the cortical substance has given relief, but in the large majority of these cases the operative procedure has not proven a success.

Dr. Stephenson closes: I have nothing to add, except to say I had hoped for a free discussion from those having had opportunity to observe cases of brain injury and of nervous conditions following the same; and to tell us whether or not such people should be permitted to roam around the country unattended, and also tell us what to do for such cases, if anything. To my mind, they should not be allowed, but be cared for at the county poor farm or some other suitable institution, where they could be watched and controlled.

I saw this man a few days ago, when he told me he had asked the commissioners of the poor farm to allow him to go there to live and to do such work as he could, but said they would not permit him. If such people are considered insane they should not be running about the country at will. If he ever had epilepsy prior to the injury I do not know it; so far as I have been able to learn, there is no such history.

I have treated several cases of head injuries—had a few other cases where it was necessary to trephine and remove considerable bone—but in none of the other cases have I had the nervous symptoms develop as in the case reported, and was therefore anxious to learn if there might be something further done to help this man, either by medicine or operation. I am frank to say that epilepsy, and some other forms of nervous disease, "gets my goat," when it comes to understanding them; and I believe such animals (goats) generally go in herds, as we have seen.

In conclusion, I might say I had a further interest in reporting this case, in that it might stimulate some other timid doctor to operate on a seemingly hopeless case, and thereby possibly save to the relatives and community the life of one whose presence and association are very much desired.

As to whether or not this is the best thing to do for the individual and all concerned, I shall not attempt to say. Personally, I believe I would prefer to take the trip, but about this I am not quite sure.

MEDICINE

(INTERNAL DISEASES, PEDIATRICS, NEUROLOGY, DIAGNOSTIC METHODS, ETC.)

HEART ARHYTHMIAS.*

By E. C. Thrash, M.D.,
Atlanta, Ga.

No disturbances of the heart are so common as those which interfere with its rhythm, and these disturbances no doubt confuse the average physician more than do any other heart lesions. In discussing this subject the essayist will attempt only to describe those factors which produce irregularities and inconstancies of the heart—arhythmias, and not those produced by such causes as Graves' disease, tachycardias, bradycardias and so forth, where there is only a change in the rhythm—allorhythmias.

The causes which produce irregularities in the heart are best studied under two heads—those that are extra-cardiac and the ones which are intra-cardial. The principal extracardial causes of arhythmia are: (a) Cortical; (b) toxic; (c) mechanical; (4) reflex from pathology in other organs; (e) vagopathic.

Cortical.—This refers to forces acting from without the body by putting the nervous system in an unstable state. On account of the lack of equilibrium and poise of the nervous system in children this disturbance is exceeding common among them. It is often the case that children will suffer from arhythmias from anything which will upset their nerve poise. Just as this is the case in children so it is with all persons who are of a psychaesthenic or neuraesthenic temperament. This class of sufferers is often much distressed with the heart when it really has no pathological significance, and may be a reflex action from any real or imaginary ill.

Toxic.—Poisons which produce arhythmias may be either of bacterial or chemical origin. In toxemias from acute infections such as meningitis, pneumonia, typhoid fever, the exanthems in children, endarteritis, endocarditis and so forth, the arhythmias are not at all uncommon and are always danger signals. The chemical poisons which produce this effect are principally caffein, tobacco and whisky. The source of caffein poison is usually from coffee and tea, but in the South it often comes from coca cola. Tobacco produces the most distressful symptoms of any of the chemical poisons. It brings one promptly to his physician and he feels that he has a heart lesion that will prove fatal at any moment. Whisky, from the writer's experience, is less apt to produce disturbances of rhythm in the heart than the other chemical poisons mentioned, though often it will produce symptoms of this sort.

One of the peculiarities of these poisons is that the disturbance usually comes on while one is at rest, and exercise will correct it. I have often seen the most profound arhythmias relieved by having the patient hop a few times across the floor. This procedure often enables one to differentiate this type from absolute arhythmias, which are organic and are made worse by any form of exercise.

Mechanical.—Anything which will interfere with the influx or outflow of blood through the heart, or that will handicap it by pressure or compression, will not infrequently interfere more or less with its rhythm. There may be fluid in either one of the pleural cavities which may press the heart out of its normal position and disturb its mechanism. I have seen several cases of arhythmia brought about from artificial pneumothorax in the treatment of pulmonary tuberculosis, due to belaboring the heart from gas pressure. Tumors may also

*Read in Section on Medicine, Southern Medical Association, Eighth Annual Meeting, Richmond, Va., November 9-12, 1914.

disturb its normal function by pressure either upon the heart or pneumogastric nerve, though a case of this kind has never come under the writer's observation.

Accumulation of gas in the gastroenteric tract often produces irregularities of this nature. One of the most common sources of this gas is caused from aerophagia. People who find relief by belching usually get into the habit of swallowing air and eructating it under the impression that they are relieving their distress, when they are only adding to it, as they invariably swallow more air than they eructate. It is a habit that will get one in its grip more readily than almost any other, as it is so easily done that one soon begins to accomplish it unconsciously. All that is necessary to accomplish this feat is to press the tongue in the roof of the mouth and swallow while one is taking an inspiration. The gas then passes into the esophagus, part of it is eructated and the rest swallowed. A vicious circle is soon established whereby the disturbance of the heart is kept up by this gas pressure.

Adhesions of the pericardium to the surrounding viscera is a common source of arhythmia. If the adhesions are anterior the flow of blood through the vena cava is disturbed by deflating the lungs, therefore the arhythmia takes place upon expiration. This is due to the tugging upon the large veins which are situated somewhat anteriorly and the blood flow disturbed. If these adhesions are posterior, the movement of the lungs upon inspiration will produce a traction upon the aortas and interfere with the outflow of blood from the heart, and in this way disturb its rhythm. These are respiratory arhythmias, but the disturbance is largely mechanical.

Ptoses of the abdominal viscera are fruitful sources in the production of an irregular heart. This is caused by the pulling down upon the diaphragm to which the pericardium is attached and in this way disturbing the heart-beat. The principal ones of these are gastro-ptosis and splenoptosis.

Reflex from Pathology in Other Organs.—Disease of almost any organ of the body may reflect upon the heart and interfere with its rhythm. This has been found to occur even in cystitis, inflamed prostate or rhinitis, but it is especially apt to do so in the organs innervated by the vagus nerve.

Vagopathic.—In the course of the vagus nerve along the mediastinum it often becomes so enmeshed in tubercular processes—especially adhesions of the visceral to the mediastinal pleura—that its functions are much disturbed. I have done post-mortems in cases having previously suffered with profound arhythmia where the visceral pleura would be so firmly adherent to the mediastinum that they scarcely could be separated, and when the parts were pulled asunder the vagus nerve would be torn and broken up. Often the tubercles would show encroachment upon the nerve to a degree that the trunk would be more or less affected.

Some of the peculiarities which distinguish the foregoing types from those that follow are that many of them occur in neurotics and psychaesthenics; they appear during rest periods, they are relieved by exercise and a dose of atropine will benefit or relieve them by producing a sedative effect upon the vagus.

Arhythmias which are due to disturbances which are intra-cardial are caused either from some pathology of the heart itself or its nerve supply. The principal ones of these are as follows: (a) Systoles of irregular and varied force; (b) double systoles; (c) bigeminal pulse; (d) drop of beat; (e) auricular fibrillation; (f) heart-block.

Systoles of Irregular and Varied Force.—Where the heart muscle has become weakened and debilitated from atrophic changes, valvular lesions or miocardial weaknesses of any nature to the extent that it has not the strength to develop a forceful stroke, this weakened stroke, failing to empty the heart properly, will necessitate a stronger one the next time, so that there may be a variability in this process to a degree that it will take up an alternating strong and weak stroke. This type has been called the pulsus alternans.

Double Systoles.—A double systole is produced by dilatation of the heart, weakened musculature or severe valvular lesions. Should the heart thus weakened in its systolic effort fail to empty itself as usual, it simply pauses and makes another systolic stroke before diastole sets in, thereby doubling the systole.

Bigeminal Pulse.—In case of mitral stenosis and marked dilatation of the auricles and right heart should digitalis be given there will often be a regular and uniform dual systole, which is ordinarily spoken of as bigeminal pulse.

Drop of Beat.—In an irritable heart and especially one that has undergone pathological changes, the auricle may contract so rapidly that the ventricle may fail to keep the pace and occasionally skip a beat. Either toxaemias or organic lesions often produce this condition.

Auricular Fibrillation.—It is only within recent years that auricular fibrillation has been well understood. Investigations of His have helped to clear up this lesion, together with heart-block, which I shall discuss later. The essayist wishes to refrain from sophomoric details, but it will be necessary to make some reference to the anatomy and physiology of the heart to discuss this phase of the subject intelligently.

The heart impulse begins at the juncture of the vena cava and auricle. The primary innervation which terminates in the ventricular systole begins at this point and the impulse is transmitted not through the nerves, but through certain highly differentiated muscle fibers. If the bundle of His in the septum between the auricle and ventricle is normal the systolic impulse begins at the point above mentioned and travels in a wave along the Purkinje fibers until it reaches this bundle, through which it is transmitted to the ventricle, when the process is complete. Should these fibers leading from the veno-auricular junction become degenerated from any disease process, or so stretched that they lose their tonicity and impulse conductive power on account of dilatation of the auricles, as in mitral stenosis, regurgitation or other severe heart lesions, they become unable to convey these impulses properly. The result is that instead of having a single impulse conveyed directly from the auricle to the ventricle at regular intervals through this pacemaker, each muscle fiber of the auricle begins to make a pace of its own and to contract at irregular intervals.

This independent contraction of each fiber sets up a general writhing and torturous movement of the auricle without conveying but few if any impulses to the ventricle that are strong enough to stimulate it to activity. The result is the ventricle has either none or only an occasional signal for activity and must act independently of the auricle and, consequently, without any degree of rhythm. This type is called absolute arhythmia and in it the ventricular systoles are so irregular that they may conform to every type previously described. There will be double systoles, pulsus alterans, bigeminal pulse, dropping a beat and beats of varied and irregular force—all heard from the same heart within the space of one minute.

Heart-Block.—The clinical phase of this lesion was worked out many years ago by Adams and Stokes and the syndrome which it produced has since been called by their names. Its pathology and cause remained unsolved until the investigations of His in the early nineties showed that it was due to the break in the connection between the auricular systolic impulse and that of the ventricle.

The muscle fibers in the auriculo-ventricular septum communicate directly with the Purkinje fibers, which originate at the veno-auricular junction, so that when the impulse begins at this latter point, which is the pacemaker for the heart, it reaches the ventricle through the fibers of His.

The pathological conditions which disturb this impulse system sufficiently to interfere with its proper functionating cause a break at the septum and it is not transmitted properly to the ventricle. The auricle keeps up its regular rhythmic stroke, but there may be simply an occasional impulse that will fail to pass through, or a third or fourth may fail, or every

other one, and finally—in extreme conditions—they may all fail. In the latter condition the ventricle becomes disassociated from the auricle and it is forced to establish a pace of its own which is extremely slow and sometimes may occur at such a long interval that death will ensue. The interval, however, may be only long enough to produce a systhenic convulsive state which has been so accurately described by Adams and Stokes that it has since been called Adams-Stokes disease.

Disease changes taking place in these fibers sufficiently to produce heart-block may develop from more or less acute syphilitic lesions which produce granulomata and gumma in and near the structure of His' fibers. These fibers may also undergo brown atrophy or fatty degeneration from old age or from toxemias. They may develop from fibrosis from the same conditons which produce arterio-sclerosis, and this fibrosis may progress to a degree of atheroma or calcareous infiltration. Any of these disturbances may produce either partial or complete heart-block in proportion to the progress which they have made in destroying the His-bundles.

A simple method of diagnosing this condition is to place the stethoscope at the apex of the heart and at the same time watch the auricular contractions which will produce pulsations in the veins of the neck. If these two impulses do not occur simultaneously it shows that there has been disassociation.

The treatment of arhythmias is as varied as their causes. The treatment of the ones produced by factors external to the heart itself must be based upon methods which will relieve these disturbances. The neurasthenic must be relieved of his neurasthenia, the sufferer from visceral ptosis must have his condition relieved and the mechanical disturbances which interfere with the heart's action must be diagnosed and relieved if possible. It would be impossible in an essay of this length to give a detailed treatment of all the varied processes producing these disturbances. One drug, however, which should be especially mentioned is atropine. It will not only temporarily relieve functional disorders, but the fact that it does relieve them aids one in making a diagnosis, as this drug will not relieve those of intra-cardial origin, but will make them worse, as it has a slightly paralytic effect upon the vagus.

The lesions which are intra-cardial must be treated by directing the attention toward the heart itself. If there are any luetic complications they should be treated, and from the writer's experience it is erroneous not to give salvarsan in this form of syphilis, as its efficacy has been decidedly apparent in his hands.

Arterio-sclerosis, atheroma, calcareous infiltration and toxemias play an important role in producing these latter lesions, and they should be treated according to classic methods for handling such conditions. Digitalis is par excellence the remedy to restore the heart to its normal tone and it should never be overlooked in the treatment of organic arhythmias.

THE CAUSES OF INDIGESTION—A STUDY OF ONE THOUSAND CASES.*

By Douglas VanderHoof, A.M., M.D.,
Professor of Medicine in the Medical College of Virginia, Richmond, Va.

This clinical study is based on the histories of one thousand consecutive patients who presented themselves for the relief of chronic or recurring indigestion. The series is made up entirely of private cases, for the most part referred by the attending physicians. It embraces only those patients whose chief complaint was attributed to some disturbance of digestion, such as "stomach trouble," dyspepsia, abdominal pain or distress, flatulence, vomiting, etc., and entirely excludes patients complaining of other symptoms who were

*Read in Section on Medicine, Southern Medical Association, Eighth Annual Meeting, Richmond, Va., November 9-12, 1914.

found, on examination, to have some intra-abdominal lesion.

The classification of the causes of indigestion has always been a matter of some difficulty in the past and, as a result, a purely symptomatic nomenclature has obtained which still appears in most text-books on the subject. The recent advances in physiology and surgical pathology, however, together with the intrepid explorations of our surgical colleagues, have accomplished many steps in the problem of assigning the various symptoms of maldigestion to their proper causes.

Now that the real nature of stomach symptoms is being more definitely understood, the difficulty of attempting a classification of stomach affections becomes apparent. As James Mackenzie has well said, we have been attempting to differentiate what cannot be differentiated.* He emphasizes the fact that, except for certain characteristic conditions which refer only to a very small proportion of the cases, all the symptoms are of a reflex nature, pain, cutaneous and muscular hyperalgesia, muscular contraction, vomiting, air-swallowing, etc. As any adequate stimulus may suffice to produce these symptoms, and as this adequate stimulus may arise from the most varied causes, it follows that there is a great similarity of symptoms in diseases of the most varied kinds.

Mackenzie and others have shown that in visceral disease certain areas in the spinal cord become so irritable that stimuli from the periphery give rise to an exaggerated response. "This irritable focus in the cord is of great frequency in stomach troubles. When pain occurs after food it must not be assumed that there is an inflammation of the mucous membrane, or that the stomach itself is hypersensitive. The ingestion of food under normal circumstances is accompanied by reflex processes which are not perceived, and pain merely indicates that there is an irritable focus in the cord through which these reflex processes pass. The lesion inducing the irritable focus in the cord may not necessarily be a stomach lesion at all, but may arise from a neighboring organ whose reflex center in the spinal cord is in close proximity to that of the stomach." Thus in gallstone colic, or in acute inflammation of the appendix, the pain may be so violent as to invade the stomach area in the cord, and in chronic inflammations of these same organs this invasion of the area in the cord gives rise to the various train of symptoms referred so constantly to the stomach.

In order to determine the proportionate frequency of the various causes of indigestion, I have tabulated the clinical diagnosis in a series of one thousand patients examined by myself and Dr. Hutcheson (Table I). Each patient has received thorough study, including a careful history, complete physical examination and the necessary laboratory analyses, including as a routine one or more gastric analyses, urine examination and differential blood count with hemoglobin determination. Advantage has been taken of skillful X-ray studies, and most helpful has been the free and unconstrained consultations with my surgical confreres, Dr. George Ben Johnston and Dr. A. M. Willis, in whose operating rooms I have seen many of these patients treated surgically.

TABLE I.

Causes of Indigestion. Summary of 1,000 Cases.

	Per Cent
Appendicitis	24.6
Cholecystitis	11.7
Neuroses	10.1
Peptic ulcer	9.4
Chronic gastritis (achylia gastrica)	3.6
Visceroptosis	3.4
Cancer stomach	2.3
Post-operative adhesions	1.6
Enterospasm	1.5
Migrane	1.3
Cancer intestines	1.2
Infectious diseases	0.8
Enterogenous toxemia	0.5
Affections of kidneys	7.1
Lungs	2.8

*J. Mackenzie. "Symptoms and Their Interpretation." Second edition. Chapter XII.

Heart	2.3
Eyes	2.0
Female pelvic organs	1.9
Blood and ductless glands	1.8
Liver	1.1
Nervous system	1.1
Ears	0.8
Miscellaneous	5.8
Diagnosis not made	1.3

A summary of Table I is contained in Table II. This shows that appendicitis and cholecystitis are responsible for approximately 35 per cent of the cases of chronic or recurring indigestion; peptic ulcer and neuroses, each 10 per cent, and carcinoma involving stomach or bowels, 5 per cent. Ten per cent of the cases fall into a group including chronic gastritis, visceroptosis, peritoneal adhesions, enterospasm and enterogenous toxemia; while 25 per cent are included in a group in which the indigestion is a reflex disturbance from affections of the kidneys, lungs, heart, eyes, blood and ductless glands, ears, central nervous system, female pelvic organs, and migraine and chronic infectious diseases. The remaining 5 per cent, classified as miscellaneous, include such conditions as pellagra (eight cases), amoebic dysentery (six cases), malaria (five cases), diseased tonsils and cyclic vomiting (in children, respectively six and five cases), intestinal parasites (four cases), together with instances of diverticulitis, peritoneal tuberculosis, cancer of the pancreas and esophagus, retroperitoneal sarcoma, etc. In those patients in whom more than one lesion existed as a possible reflex cause of indigestion, I have tabulated, according to my discretion, the one most likely to be responsible. The occurrence of both appendicitis and cholecystitis in the same patient is so frequent, however, that the figures are more correct if these two conditions be combined as in Table II.

TABLE II

Summary of Table I, with approximate percentages.

Appendicitis and cholecystitis	35
Peptic ulcer	10
Neuroses	10
Cancer (stomach and intestines)	5
Chronic gastritis, visceroptosis, peritoneal adhesions, enterospasm and enterogenous toxemia	10
Affections of kidneys, lungs, heart, eyes, blood and ductless glands, ears, central nervous system, female pelvic organs, migraine and chronic infectious diseases	25
Miscellaneous conditions	5
	100

It is very likely that the percentages attributed to peptic ulcer and to the neuroses (each 10 per cent) are too high. Many of the ulcer cases were treated medically, and a diagnosis of neurosis is often accompanied with a question mark. It is my belief that certain of these cases, if they could have been followed further, would have proved to be instances of diseased appendices or gallbladders, and that the true incidence of appendicitis and cholecystitis approaches 40 per cent in the causation of chronic or recurring indigestion.

Of the patients in whom the diagnosis of appendicitis or cholecystitis was made, I have on the histories the record of all who were operated on to my knowledge. In certain instances the patients refused the advice of surgical treatment, while others could not be followed. I have the operatives notes of 145 of the 246 cases of appendicitis, and of 60 of the 117 cases of cholecystitis. All of these patients have been communicated with by letter in the effort to learn the end results of the treatment outlined. The replies have been subjected to a strict interpretation as to whether the patient is entirely well, much improved or unimproved in health. In Table III is contained the result of this inquiry, which shows that of a total of 363 cases of appendicitis and cholecystitis, 205 were operated on; that of these, replies were received from 134. From these letters it is learned that 61 per cent are well, 28 per cent are much improved, and 11 per cent are not improved.

TABLE III.

Results of surgical treatment in the cases of Appendicitis and Cholecystitis.

	Patients Operated	Patients Reporting	Well	Much Improved	Not Improved
Appendicitis	145	93	54 or 58%	27 or 29%	12 or 13%
Cholecystitis	60	41	28 or 68%	10 or 25%	3 or 7%
Totals	205	134	82 or 61%	37 or 28%	15 or 11%

In the effort to determine the cause of failure in twelve cases of appendicitis and three cases of cholecystitis, I have reviewed these cases in detail, but append only the following abstracts. In each case the patient's convalescence in the hospital was uncomplicated. Only one patient in the series died as the result of the operation. This was a case of gallstones in a morphine habitue who also had chronic nephritis, and death occurred forty-eight hours after operation, due to suppression of the urine.

APPENDICITIS.

Case 1 (1910)—Male, age 35. Apparently a plain case with history of abdominal cramps followed by shifting of pain to lower right abdomen. No operative note except that a diseased appendix was removed through a McBurney incision.

Case 2 (2061)—Female, age 40. The condition was complicated by a chronic gastritis (achylia). Operative note: "Right rectus incision. The appendix was found much diseased and adhered to the cecum. The stomach and gallbladder were examined and found negative."

Case 3 (2300)—Male, age 36. This patient's condition was complicated by evidences of hypothyroidism. His operation was preceded by X-ray examinations of the kidneys and ureters, and also a bismuth examination of the gastro-intestinal tract. Operative note: "McBurney incision. The appendix was quite large, subacutely inflamed and contained many concretions."

Case 4 (3074)—Male, age 10. This unfortunate man was most neurotic, gave a history of indigestion extending over twenty years, which had incapacitated him from work. In addition to evidences of appendicitis, he had many vasomoter symptoms. Operative note: "Right rectus incision. Badly diseased appendix adherent to the bowel. Gallbladder and stomach negative."

Case 5 (3132)—Female, age 51. Prior to operation in this case, a diagnosis of cholecystitis was made, and in August, 1914 (two years after operation), she writes that she had had two acute attacks of "liver colic." Operative note: "I operated through a right rectus incision. There were no stones in the gallbladder, but she had chronic cholecystitis, hard enlarged pancreas, and an inflamed and adherent appendix. I drained the gallbladder and removed the appendix."

Case 6 (3134)—Female, age 43. At the time of operation, eighteen months ago, this patient had evidence of marked visceroptosis and increased blood pressure, together with a fibroid uterus. She recovered promptly from her operation, but writes that she is not at all well, has had attacks of impaction of the bowel, suffers much from flatulence, and has not gained in weight or strength. Operative note: "I opened the abdomen in the middle line, finding chronic appendicitis and multiple fibroid growths of the uterus. I amputated the appendix and did a supravaginal hysterectomy. I palpated the gallbladder and found it normal."

Case 7 (3532)—Female, age 37. This patient gave a history of indigestion "since girlhood," punctuated with typical attacks of acute appendicitis, beginning with epigastric cramps, pain radiating down to lower part of abdomen, with nausea, and requiring morphine. Eighteen months after operation she writes that she suffers from nausea, acid stomach, distress after meals and marked flatulence. Operative note: "Operation showed chronic apendicitis with post-cecal Lane's kink. The uterus showed small intramural fibroids. The stomach and gallbladder were found negative. Appendectomy, abdominal hysterectomy and perineorrhaphy."

Case 8 (4008)—Female, age 52. This case was complicated with chronic fibroid phthisis and marked visceroptosis. Fourteen months after operation she writes that she has frequent attacks of epigastric pain and much flatulence. Operative note: "I operated through a right rectus incision, removing a subacutely inflamed appendix and draining a chronically inflamed gallbladder."

Case 9 (4241)—Female, age 44. This patient was operated on for peptic ulcer, having given a clear history, including coffee-ground vomitus and passage of tarry stools. Operative note: "Right rectus incision. The stomach was carefully examined, as was also the duodenum, and no ulcer could be found. The gallbladder was also negative, except for a slight adhesion between it and

the duodenum. The appendix showed some evidence of inflammation and was removed."

Case 10 (4283)—Female, age 23. This patient gave a typical account of appendiceal indigestion dating back six years, with a history of epigastric cramps of gradual onset followed by much soreness, and requiring hypodermic of morphine. There is no operative note, but she writes that she was operated on at her home and her appendix removed, but she has derived no benefit from the operation and feels satisfied that she did not have appendicitis.

Case 11 (4325)—Male, age 27. This patient was operated on shortly after a second attack of acute appendicitis, when he showed tenderness and muscle rigidity in the lower right quadrant. He gave a history of indigestion of several years' duration. X-ray of the kidneys and ureters was negative. No operative note except that patient was operated on through a McBurney incision and a diseased appendix removed.

CHOLECYSTITIS.

Case 1 (2408)—Male, age 54. Operative note: "The gallbladder was found to be much thickened and contracted, contained glairy mucus and four gallstones, the largest of which measured 1 cm. in diameter."

Case 2 (3054)—Female, age 39. This patient had been a great sufferer from indurative headache, was nervous and suffered from much depression at the time of her menstrual periods. Previous X-ray of the kidneys and ureters negative. Operative note not obtained, except that the gallbladder was drained and the appendix removed. Stomach, duodenum and pelvic organs found normal.

Case 3 (4035)—Female, age 42. Thirteen months after operation this patient writes that she still has attacks of intense cramps in the stomach with vomiting; also suffers with sour stomach and flatulence. Operative note: "Right rectus incision. Twenty-one gallstones removed and gallbladder drained. Diseased appendix removed."

DISCUSSION.

Dr. George T. Tyler, Greeneville, S. C.: I regret very much this paper was not presented before the entire Association, because the subject of indigestion is too vast to be confined to the medical section and because of its great significance it can teach us so much. It is like giving a shotgun prescription to speak of indigestion. The word indigestion is very vague and indefinite. It means little or nothing. The thing to do is to put our hands on the real cause if we can possibly do so. One of the last diagnoses I make is neurasthenia, and next to that is indigestion, which means that I don't know.

THE MANAGEMENT OF FUNCTIONAL NERVOUS AFFECTIONS—MODERN METHODS ILLUSTRATED.

By Tom A. Williams, M.D., C.M., Edin., Washington Society Nervous and Mental Disease, Foreign Corresponding Mem. Soc. of Neurol., Paris, etc., Neurol. Epiph, Dis., Washington, D. C.

GENERAL CONSIDERATIONS.

Nervous diseases are often called functional because structural changes have not been demonstrated. Some physicians maintain that an organic change is present in every disorder. using the term functional to imply a lack of knowledge. I wish to protest against that attitude.

We will not speak now of any disorder of function due to actual physical changes in the nervous system itself.

Functional nervous diseases are of two kinds, those due to a disordered reaction of the nervous system because of disturbed metabolism from improper nutrition or deficient secretory conditions, and those disturbances of nervous reaction without any physical disorder, but in which the orderly reactivities of the arrangement of the nervous system into functional systems are not accomplished because of some manner or trend of direction in which they are orientated. These we call psychogenic disorders.

Psychogenic disorders are illustrated in Pavlow's dogs with gastric fistulae. He showed that a dog normally secretes gastric juice when he is shown a piece of meat, and that having heard a bell ring at the same time, the dog learns to associate the two events so that when the bell is rung the dog's gastric fistula secretes gastric juice just as when shown a piece of meat.

That is a "conditioning" of a reflex, but it

*Read in Section on Medicine, Southern Medical Association, Eighth Annual Meeting, Richmond, Va., Nov. 9-12, 1914.

is not the ringing of the bell in itself that causes the secretion, but the *idea* that the dog has of the *meaning* of the bell—a psychological process—which causes it to have an emotion of pleasurable anticipation which leads to the flow of gastric juice.

A whip being shown, the flow of gastric juice was inhibited as a result of the stimulus of fear, because the dog realized the meaning of the whip, bringing an apprehension of impending pain and fear thereof, and it was the meaning (which is a psychological factor) which prevented that dog from secreting gastric juice.

These experiments, together with Cannon's proving that fear causes hyperadrenia in cats and Crile's proving that fear can kill, illustrate how psychological processes influence bodily reactions. They correspond to some of the clinical facts, and leave no room for scepticism as to the real efficiency of psychological reaction.

I. *Disorders of physical origin often comprised under neurasthenia.* In studying those functional nervous conditions having a physical source we will refer to that old "waste-bag" neurasthenia, not, however, in the sense of psychological disturbance used by some writers—Dejerine, Raymond. Neurasthenia is a syndrome, often of complex causation, of which exhaustion is the chief feature, accompanied or not by pains and other symptoms. It is not a clinical entity.

Etiologically speaking, there are various types of so-called neurasthenia, as for instance: The middle-aged neurasthenic, who nearly always has some physical deterioration disorder; the tubercular neurasthenic; the neurasthenic with disorders of the internal secretions.

In the middle-aged type the sphygmomanometer will detect a large number of cases with high blood pressure, and many will be found with renal disorders even short of the exhibition of hypertension in the blood vessels.

Hypertension itself is merely one of the signs of toxicosis, as is shown in such patients, when they reach a more advanced stage, by clinical and pathological manifestations definitely due to failure of proper metabolism of proteins* We know in therapy that many of such patients are imediately relieved when there is a limitation of the intake of food protein, and we are beginning to think that it may not be a matter of quantity of protein but a matter in part of the kind of protein, which to certain persons is toxic in that respect, just as we know that there are other than food proteins which are toxic to various parts of the body. This subject is new, and is yet to be worked out in detail, but it is not new that we can by appropriate dietetic therapy keep many of these patients comfortable for a great number of years.

Case 1—So-called neurasthenia from metabolic disturbance. An example referred by Dr. Atkinson is the case of an engineer, 35 years old, who had obsessions, could not concentrate on his work and fell asleep over it, and believed that he was losing his mind. Since leaving active field work he had been doing only office work for three months, and had the usual syndrome of disordered metabolism in a robust man. When his intake of protein was limited and the carbohydrates and salines increased he was well in a week.

Case 2—The effect of Christian Science. A similar case refused to consult a doctor, adopted Christian Science, and finished up with suicide in six months, due to a toxic condition which would have been easily removable by dietary.[1]

The tubercular neurasthenics were spoken of by Dr. Haskell, of Bridgeport, who found a large number of them among the dispensary's ambulants "neurasthenics."

Dr. Head, of Minneapolis (A. M. A.), found that many well-to-do neurasthenics were tubercular, and he believes that such cases were numerous among those benefited by Dr. Weir Mitchell's well known methods. (2)

The "nervousness," the syndrome of erythism with psychological excitement in hyper-

*Missouri Cyclop, 1911; Critic and Guide, 1914; New England Medical Journal, 1914; West Virginia Medical Journal, 1915.

[1] New York Medical Journal, 1911.

thyroid patients is now well known, as is also the depression of hypothyroidism which, in elder people, is often overlooked.

In dysthyroidism the peculiar recurrent states of neurasthenia, great prostration, and inability to concentrate have been well described by Dejerine.

Pituitary disorders, too, create neurasthenic form symptoms.

Insufficient secretion of the adrenal gland produces the clearest and simplest type of neurasthenia, characterized by extreme asthenia, an inability to think clearly, discouragement in consequence, accompanied as a rule by low blood pressure.*

Treatment of physical causes. Now the therapy of all these different types should obviously not be the rough empiricism of the so-called rest cure, but should be directed to the cause of the condition.

There is a toxic condition without exhaustion, but rather causing restlessness and excitement, called by the laity nervousness or nervous temperament or disposition. It is frequently caused by caffein. (Arch. of Pediatrics, 1910). It often shows itself in children by a wiggling, a twitching or tic.

Psychologically, there is a feeling that the time is out of joint, nothing goes right, that things are all wrong.* Later on, if the condition remains chronic, the person does not recognize that it is his ideas of reference that are wrong: there is a pessimistic tone. These ideas of reference may become the foundation of Paranoia.

But even when a physical condition which has caused restlessness or a habit of jerking subsides, the habit may persist, and the patient who has learned to jerk his shoulder because he has a tight coat may go on jerking his shoulder from habit for the rest of his life. Such patient will require for their therapy psychological measures, just as some cases which originated psychologically require physical measures also.

Psychological causes illustrated by cases of writer's cramp, traumatic neurosis, suicidal impulsions.

We now come to a consideration of the mechanism of the cases which originate psychogenically.

Case 3—Writer's cramp. A man referred by Dr. Williams, of Boston, had been unable for one month to write his name clearly on account of a tremor. We know tremor is a symptom of toxemia or of nervous disease; but this man could draw without trembling, which he could not do if his neurons were diseased or intoxicated, so we concluded that his tremor was psychogenetic. On analysis we find that the first time he trembled was when he returned to work after a surgical operation before he was fit. The bank did not recognize his signature, and apprehension of this caused him to tremble thereafter when attempting to write. Re-education led to his cure in a month after one visit.

The role of mental prepossession inhibiting the due co-ordination of muscular movements was explained to him and illustrated by means of the strokes in lawn tennis, more especially that known as the drive. It was shown that fear of making an improper stroke is very likely to lead to lack of freedom and cramping of the muscles, which are the very positions to be avoided. Still greater anxiety will create an uncertain, wobbling stroke, the inco-ordination of which is comparable to his writing.

A further illustration used was that of Jastrow's* investigation of the relative efficiency of the employes who first used the enumerating machine in the census of 1900, as against those who were brought in later on account of the disappointing output of the others. The special preparation of the first set of clerks, so far from giving greater speed, only produced the feeling of the difficulty of the task, which they never transcended, being quickly surpassed in amount of work by the clerks who received no special preparation whatever.

*Nervous Symptoms Preceding Arteriosclerosis. Month. Cyclo., 1911

Jour. A. M. A. Sept., 1911

*The Syndrome of Adrenal Inadequacy. Jour. A. M. A. Dec., 1914

*See Hysteria and pseudo hysteria, A. J. M. Sc., 1910.

*Jour. fur Neurol. u. Psychol. loc. cit., Leipsic, 1911, Bd. 19., for a full discussion of the genesis of the disorder and its treatment.

*Factor table in psychology, MacMillan, 1900.

The relation of these facts to the episode of the refused check was discussed with him at length. When he had clearly realized the psychological mechanism of his condition he was directed to entirely cease writing with purpose, and to begin exercise with free-arm movements with chalk on a blackboard, paying no attention to the forms he drew, but concentrating himself upon the attainment of freedom in action. When this was insured, he might pass to a slate, and later to pencil and paper, and gradually reduce the size of the writing. He was asked to send me specimens of his efforts, but this he did not do, and he did not reply to an inquiry addressed to him one month later. But over two years later he sent me a specimen and informed me that he had almost entirely recovered after one month of the exercise prescribed. (N. Y. M. Jour., March, 1911.)

Case 4—A woman of 40 referred by Dr. Little who was proud of her speed in writing found herself unable to write legibly because she was occupied by anxiety for her children, who had scarlet fever. She was cured after the mechanism was worked out. (Amer. Med., July, 1912.)

It is useless to treat such functional nervous affections by massage, electricity, rest of the part, and the distractions of travel, as these measures do not meet the real issue of not being able to write. Until that is analyzed and the patient shown the methods, all other therapy is meaningless.

Another instructive type of functional disorder, often, too, an occupational one, is the traumatic neurosis. (3)

Traumatic Neurosis.

Case 5—A railway brakeman seen with Dr. S. S. Gale, Roanoke, Va., had his back injured severely and was laid up for a week. He feared spinal disease; six months later he was still on crutches, in pain, with anesthesia up to the hips; had lost twenty pounds in weight, complexion sallow, eyes dull, frequent attacks of weeping and extreme dejection, a hopeless outlook, simply because he believed he was damaged for life. (This case is reported in full, Med. Record, May, 1909.)

(N. Y. M. Jour., March, 1911).

*The details of cases are embodied in the full reports referred to in parenthesis.

Examination showed there was no lesion of the spinal cord or of the peripheral nerves. His sensibility and motility were impaired only because he did not **believe** he could feel or walk; his emaciation and sallow tint were due to depression of mind, which hindered sleep, appetite and assimilation. He was restored to health in a month after one interview, in which the condition was explained to him.

Case 6—**Attempted suicide from depression.** A farmer's son, 22 years of age, after some weeks of moody behavior, threw himself into a creek. He was quickly rescued by his brother, who reproached him severely. This did not deter him, for a few weeks later he swallowed laudanum. This led to his removal to a sanitarium, where, after a few weeks, he crushed and swallowed an electric light globe. Later he gained access to a medicine cupboard and again swallowed laudanum. He was brought to Dr. A. B. Hooe, in Washington, by friends, who asked me to examine him. Examination showed no physical disorder, but I discovered that there existed a psychological situation most serious, undiscovered and not even suspected by anyone else.

The boy was so ashamed of himself, although still determined to commit suicide, that it was hard to reveal the facts from the analysis, where was found the very simple explanation of his distressing predicament.

To state the matter briefly, upon this boy had devolved, since the death of his father, the management of his mother's farm. But a younger brother had succeeded in interfering a good deal with his plans, much to his mortification; and when also a neighbor's meddling was acquiesced in by his mother, the situation became intolerable, as he had already failed in an attempt to work happily in another environment, which he tried for over a year. Suicide, therefore, seemed his only escape.

As he said, "I would be better off dead. People are always picking on me, and I have to get up early in the morning in order to do the things I want to do."

He was questioned about his early life, and I found that there was the main part of the difficulty in the first place. He had been very bashful, especially in the presence of young girls. He had often tried to make advances, but had not the courage to do so. He had told his boy friends that licentious talk was wrong and was laughed at for his pains, which made him more bashful and taciturn than ever. He had learned the practice of masturbation, and then because he was so

ashamed of himself, for fear he was loose-minded and injuring his health.

The failure of this boy to stand up for himself was due to his own shame at onanism he had practiced and his fear that he was injuring his health and mentality, so that he was unable to stand up against other boys, by whom he was much teased, in consequence of which he withdrew from social life, especially where girls were concerned, and became taciturn and irritable.

He confessed that if he could be cured of the stomach pains, which he thought must have been caused by the masturbation, and incurable, he would be willing to live and would like to go to work.

He was reassured and asked to think over the explanations given him until next day, meanwhile promising not to commit suicide until he had seen me again. Discussions resumed the next day, and in less than a week the boy could be trusted alone, and in ten days returned home in good spirits to go to work.

He was treated as follows: It was first demonstrated to him so that he grasped it that he had a mistaken idea fixed in his mind as to the effects of masturbation, for it would not cause dementia and had not done so. His shame and timidity were explained by the fact that he believed himself inferior in brain to the other boys because of the masturbation. He, therefore, had not confidence, and became so timid and fearful of being mocked that he would not speak above a whisper. He understood the first day and became convinced soon after. In this case the pain resulting from swallowing the glass disappeared spontaneously, because it had been merely the familiar attempt to fix his thoughts on a bodily symptom in order to divert them from mental trouble, so common a procedure in neurotics. From the first he was allowed the maximum of freedom, while the greatest tact was employed to make him feel that he was not being spied upon.

An important point in this case is that, although the patient knew all the facts in the case, he, through his own ignorance, was unable to interpret them. As a consequence he was incapacitated in every way, which led him to attempt suicide. The fundamental point being explained, the symptoms disappeared spontaneously.

Case 7. **Gastric neurosis.** (In Dejerine's book, is a masterly exposition of the much misunderstood disorder.) A woman seen with Dr. Jackson with nervous dyspepsia was becoming more and more anxious, nervous and disturbed, and [illegible] on account of worry. She believed that she had a weak stomach and must follow a certain dietary; it became a fixed idea. She had the idea that she could not digest, and hence would not eat. The treatment of these patients is to persuade them that they are in reality capable of digesting nourishment, and they find it hard to believe that the trouble is not in the stomach itself, because they are called dyspeptic by physicians. Those are the cases for whom isolation is most applicable. (The pathogenesis is outlined, Jou. Abnor. Psy., Dec. 1908, and Amer. Med., 1909.)

Case 8—**Hysterical appendicitis.** A woman seen with Drs. Watkins and Staverly whose appendix had been removed two months before had pain in that region. It was, in reality, an apprehension of further pain and was cured in two hours when she was persuaded that it was purely imaginary. (Sing. Gynaecol. and Obstet., 1910.

Case 9—**Iliopsoas spasm psyogenic consequent upon appendicitis.** Another patient seen with Dr. I. S. Stone had persistent pain after appendectomy because of a constant reference by the patient to the region formerly painful, which produced a spasm of the iliopsoas and oblique abdominal muscles. Re-education in relaxation of muscles in general, then of those affected, was the treatment. (Wash. Med. Annals, Jan., 1912.

Case 10—**Neurotic children.** (See Am. J. Med. Sci., Oct., 1912.) **A case illustrating the mechanism of tics and insomnia by suggestion.** A child seen with Dr. Perrie, of McKendree, Md., had a series of tics consisting smacking the lips and bending down, touching the floor, resulting from her desire to avoid hurting others with her breath, which she believed was noxious, and to avoid hurting the floor with her hard heels.

Therefore, she applied the "healing kiss" to the air which she expired, and the "healing touch" to the floor. After these had been removed in a sanitarium she was thought to be too nervous for school, especially as she could not sleep for hours after her mother attempted to teach her. In reality this child was not "nervous" at all.

She was neither apprehensive, nor fidgety, nor irritable, nor of a difficult temperament. She had stayed awake by suggestion, because her parents had let her see that they were afraid of it. The matter was explained to the parents, and the child has attended school and remained perfectly well. (Wash. Med. Ann., 1912, No. 1.)

Case 11—The ardent affection of another little girl, referred by Dr. Francis Chisholm, was mistakenly repulsed by the parents. This led to a melancholia. After one hour's analysis she was cured in two weeks and restored to the class of

normal children. (Wash. Med. Ann., 1912, No. 1, 1912.)

Case 12—On account of over-anxiety of his mother, another little boy developed terrifying hallucinations even in the daytime; and, of course, school was out of the question, as the boy was supposed to be of a hopelessly nervous temperament. Half an hour's analysis served to explain this condition and a few weeks of special training enabled him to return to school quite well. (Wash. Med. Ann., Jan., 1912.)

Case 13—A boy of 13, referred by Dr. Thomas Latimer, of Hyattesville, Md., had developed, since 3, a jealousy of a little brother, which caused such shame that he devoted half his time to penances. The meaning of these was unknown to his relatives. An hour's analysis and four re-educative sittings sufficed to transform his character and turn him towards useful activities. (Post Grad., Sept., 1913.)

Case 14—A girl of 15, referred by Dr. Lawrence Lichfield, Pittsburg, found school life intolerable and was always ailing on account of terrifying nightmares, of which the parents could not discover the cause. Two weeks of analysis served to start her on the way to a transformation of character which enabled her, within a month, to remain happily at boarding school, with better health than she had ever had. (Arch. Paediat. and Ill. Med. Jour., Oct., 1914.)

All these were cases of poor adaptation, which was supposed to be due to inherent nervousness, more or less hopeless. They were really the results of faulty handling and required only a proper comprehension of their psychological constitution.

All were the children of people of superior attainments and conscience.

There are many cases in which the discovery of the etiology is not of great therapeutic importance, but where psychological habits require to be dealt with by special measure which Brissaud has called psychomotor discipline or re-education.

Case 15—**Tic cured by psychomotor discipline.** A striking case was that of a man referred by Dr. T. C. Martin because of a grunting noise which he made with respiration, while at the same time he bent his body. This was a bowing tic. Physicians had recognized its functional character and had used methods of suggestion without success. I reasoned that sudden contractions of the recti muscles and diaphragm caused the tic and that if the patient could be taught control of those muscles the movements would necessarily cease.

He was shown how to perform contraction of the recti and diaphragm, and when he was voluntarily moving his muscles he could not perform the tic; when he voluntarily contracted the diaphragm he could not make the grunting noise. He was cured in two sittings.

CONCLUSIONS.

That treatment of functional nervous disorders is spurious which does not take account of the etiology, or which applies such crude measures as "suggestion," massage, electricity, distraction, rest, isolation and feeding. This is no better than the method of Christian Scientists or osteopaths or chiropractics, who treat them by suggestion applied in ignorance without knowledge of the etiology.

Suggestion in psychological cases does harm by exalting the patient's suggestibility, which it should be our object to remove. If we adopt it in therapeutics, we are merely using an inferior method which the charlatan can use more effectively, for the Christian Science suggestion is clothed in the cloak of religion, which gives it a tremendous appeal. It also gives a definite something to hold, "there is no such thing as disease," so that it has in it something philosophical.

Even massage, a useful means in conditions of asthenia, must be applied in accordance with definite indications in physical cases, but not used indiscriminately.

We have then to distinguish the genetic factor in each case, and when possible to direct our attention to that in order to remove it.

When this is not necessary, we must get rid of the effect of that initial cause in cases of physical disorder by the appropriate medical measures we possess. But in cases of psychological disorder, it must be done by creating a mechanism whereby the psychological reactions are re-established in harmony with the environment.

These cases of functional nervous disease should illustrate forcibly how successful is the mode of treatment which directs itself

towards the rectifying of a disordered process. Of course, all medical treatment should do this, but actually the practice current against the neuroses has been a futile routine of rest, overfeeding, electricity, massage, so-called tonics, and crude suggestion without any reference to pathogenesis or mechanism and based only upon a conventional diagnosis of psychoneurosis. Not only is such treatment futile, but it is frequently most harmful in adding to the distress of obsessions, phobias, and fixed ideas, besides being a great expense and loss of time. The only way in which these can be removed is by a resetting in the mind of the patient of the facts, so that his emotional attitude may be changed towards them through the more truthful understanding made possible by their discovery and analysis through the help of the psychopathologist. The process does not differ in principle from that shown in the physiological reactions studied by Pavlow in his conditioning of the reflexes of the digestive glands by psychological stimuli; for instance, when the experimenter suppressed the flow of gastric juice of a dog by showing it a whip, he did so by transforming the scene in the imagination of the dog, thus provoking the emotion of fear through an idea. To get rid of this he had to change the attitude of the dog's mind by teaching it it was mistaken in supposing that punishment would follow the sight of a whip. So therapeutics has to show the patient that he is mistaken regarding the grounds for his apprehension. Only when he is convinced that his premises are false will the fears disappear.

1708 I Street

DISCUSSION

Dr. Wm. S. Gordon, Richmond, Va.: I would like to ask Dr. Williams a question with reference to a patient whom I saw some years ago at the request of a confrere and who was supposed to be suffering from rheumatism. Her ovaries had been removed some time before. She was in bed, stating that her joints were exquisitely tender, not even the weight of the sheet being borne. She was highly neurotic. After a study of the case I came to the conclusion that hysteria was at the bottom of it; and, in order to produce a profound impression upon the patient's mind, had some injections of sterile salt solution made about the ankle joints. She complained bitterly of the treatment, but was told that it had to be done and that she would soon be able to walk. In a few days I persuaded her to get up, and she was soon walking around with every vestige of her disease gone. Although she subsequently found out what the nature of the remedy was, and was furious for a while, she remained well.

It is to be presumed that the nervous vagaries of this case were chiefly owing to the lack of the ovarian secretion. Yet she was cured—at least as long as we could ascertain—by the measures mentioned. The question is, how far, and in what manner does purely psychological treatment avail in cases which are supposed to be suffering from organic changes in the body?

Dr. J. Allison Hodges, Richmond, Va.: I rise to speak briefly on two points. One of them is that faddism is almost as prominent in the practice of medicine as it is in other spheres of life, and one of the fads of the day is the rest treatment for almost every neurosis. Many insist upon the absolute rest treatment as one of the first methods employed. There are very few cases in my experience that ever require the absolute rest treatment or that have been benefited by that treatment when it has been rigorously employed. I wish to say further that I believe the discussion here today will be of value if it brings to our minds and impresses upon us the fact that these cases require individual study and individual treatment, and that in the study of them we must be broad-minded enough to realize that sometimes we alone are not capable of making a complete and competent diagnosis in some of these cases, and that we should be broad enough to require and call into service the efficiency of our confreres in our attempts to make diagnoses; for unquestionably, as I have brought out elsewhere, and Dr. Williams has corroborated it, the etiology of most of these cases is simple, provided it is ascertained properly, and then treatment can be instituted accordingly. I wish also to say that, if any of us are true to ourselves, we must admit that we have seen on the autopsy table, at times, small tumors in the cerebrum that were never suspected by us while the patient lived and yet were sufficient to bring about irritation, reflex conditions, etc., which were virtually neuroses of psychogenetic origin that gave us great trouble. So we must be honest with ourselves and bear in mind that we must have a catholicity of spirit when we go into the determination of these cases as to diagnosis and be willing to give the patient the benefit of all of the resources and means that are at the hands of ourselves and of our confreres in practice as well.

In conclusion, in none of these cases do I believe hypnotism is of value, and yet I do believe that in all of them, whether physical methods be used or whether the methods of psychanalysis be used, that suggestion must be and should be the dominant feature in the treatment of the case, and no man who has ever walked the wards, for instance, with Charcot can fail to believe as long as he lived that he had a dominating and saving influence over the hundreds of neurotics that were under his care. This was not noticeable later

when others took charge of the same patients in the same wards, and I must believe that there was a commanding element of suggestion in him, as there is in many practitioners of medicine, in getting these splendid results by psychanalysis and otherwise.

Dr. Tom A. Williams, Washington, D. C., (closing the discussion): With regard to what Dr. Hodges says, none of these patients with psychogenetic disorders are treated by isolation and rest. These are indicated for physical disorders. They are all treated in my own office and are all referred cases from other doctors. The vast majority of them had been treated by methods of suggestion, which had failed.

With reference to individualizing cases, we do not always succeed. One man cannot treat every case. There are certain antipathies between patient and doctor which make him unsuitable to treat that case. Most of the cases I have seen have been those in which I have been in direct consultation with practitioners who have sent for me. They are intelligent enough to know when they need neurological assistance.

I have used the word neurasthenia only to reject it. As to hysteria, I have been trying hard to interest my colleagues in the data and concept which make it clear that it is a suggestion psychosis. There is the case where Dr. Gordon removed a fixed idea of his patient. It was acquired by pure suggestion on her part, and he substituted in her mind another idea, which he implanted by suggestion. It is not a complete cure. It makes her even more liable to morbid suggestion, so that if she does go into an environment which will cause hysterical symptoms she will again have them. But if she had been or is treated by the methods of rational psychotherapy she would be immune to further suggestion of that type.

Let me add that I have never seen a case where methods of suggestion succeeded after the failure of rational procedures. On the contrary, I have observed very many cases where Christian Science and other methods of suggestion failed, but where rational methods have succeeded. Reports of some of these cases have already been published. See Illinois Medical Journal, Oct., 1914, and Wash. Medical Annals, Jan., 1912, and Am. J. M. Sc., Oct., 1912, etc.

AUTHORS' ABSTRACTS.

Medicine.

Some Medical Aspects of Hyperthyroidism. By L. F. Barker, Baltimore, Md. Johns Hopkins Hosp. Bull., Balt., 1915, xxvi, 57-58.

The paper epitomizes some of the more recent views regarding hyperthyroidism. The evidence at present indicates that the condition is due to a dysthyreosis rather than merely to a hyperthyreosis. Many patients suffering from Graves' disease are also thymus carriers. Studies of vagotonic and sympathicotonic phenomena in Graves' disease indicate that most of the cases are mixed, it being rare to see cases which are either purely vagotonic or purely sympathicotonic. Methods of determining the presence of an enlarged thymus are discussed.

The newer work on X-ray treatment of the thymus in Graves' disease is referred to. Though the results thus far are somewhat conflicting, there is some evidence that X-ray exposures of the thymus may be beneficial, especially in the atypical cases of Graves' disease. The paper also discusses the relative merits of medical and surgical treatment in this disease.

Bacteriological Study of Mouth Infections in Relation of Systemic Diseases. By August J. Streit, Marlin, Texas. Texas Medical News, January, 1915, pp. 295-296.

It has only recently been recognized that some systemic diseases whose etiology has been obscure many be traced to mouth infections.

Pyorrhea alveolosis is the most common mouth infection, and it is undoubtedly a mixed infection —nearly all the cases show the presence of the ameba buccallis. Dr. Barret found them in 42 consecutive cases, Dr. Barr in 85 out of 87 cases, and in our series in four cases where examined for.

Pus from the pyorrheal cavities shows the presence of the streptococcus viridans in a large per cent of the cases. Though this organism is of low virulence, it can in time give rise to serious disturbances. Inoculation experiments showed lesions in "arteries, joints, kidneys and heart."

The alveolar abscess is another source from which systemic disturbances may arise. Here drainage is deficient and hence toxines and bacteria are taken up directly by the blood. The streptococcus viridans is the chief-offending organism—the pneumococcus and straphylococcus are also found.

The diseased tonsils must not be forgotten as a primary focus for constitutional symptoms. In hypertrophic tonsilitis the same organisms are usually found as in the pyorrheal cases, viz: the ameba buccallis and the streptococcus viridans.

Sciatica a Symptom of Appendicitis. By B. M. Randolph, Washington, D. C. Journal of the American Medical Association, February 13, 1915, pp. 579-580.

The patient, a man of 48 years, presented himself suffering from loss of weight, digestive disturbance, cardiac palpitation and asthenia. He gave a history of good health up to an illness which occurred sixteen months previously, which was accompanied by fever, and was diagnosed "sciatic rheumatism" of the right side. I was not able to make a definite diagnosis of his trouble, though he was more than satisfied with the results of the hygienic treatment he received. A little over four years after the original attack, he was taken with acute appendicitis, and was operated upon a short time after the subsidence of the acute stage.

A long appendix was found, with an old abscess at its tip, adherent in the region of the upper division of the lumbo-sacral cord, and a fresh catarrhal appendicitis involving the proximal inch and a half of the organ. Between these two lesions, there was a portion of normal appendix several inches long.

The relation between the clinical picture and the pathological findings seems very apparent. The recent attack of appendicitis corresponded to the involvement of the proximal portion of the

organ, while the attack of "sciatic rheumatism," occurring four years before, was in reality an appendicitis, with the formation of an abscess in relation to the fibres of origin of the sciatic nerve.

Syphilitic Ulcer of the Stomach. Report of a Case Examined Histologically. By H. L. McNeil, Galveston, Texas. Journal of the American Medical Association, January 30th, 1915, pp. 430.

Syphilitic ulcer of the stomach, although said by many to be of common occurrence, is rarely demonstrated at operation or autopsy. The case reported is that of a negro laborer, aet. 50, complaining of pain in the epigastrium, appearing from one-half to one hour after meals. Duration, three months. Loss of weight. No history of syphilis, although wife had one late miscarriage. Physical examination negative except for tenderness in epigastrium, slightly to right of mid-line. Blood showed slight anaemia. Wasserman positive. Gastric analysis showed a total absence of free HCL. Total acidity 25. Occult blood, lactic acid and Oppler Boas bacilli present. No definite improvement after two weeks antiluetic treatment (Hg. plus K. I.). It was decided to operate on the chance of finding an early cancer of the stomach

At operation an indurated pylorus was found with a general enlargement of the mesenteric and gastric lymph nodes. A pyloric resection was done. Examination of the specimen removed showed a soft ulcer completely encircling the pylorus. The edges were soft and undermined. At one extreme end there seemed to be an attempt at healing. Microscopically, the picture was that of a degeneration, chiefly of the submucosa, associated with a marked periarteritis, in which the mononeuclear cells played almost the entire part.

Patient made a complete recovery and was perfectly well from his stomach trouble eight months after operation. (Thorough antiluetic treatment including two injections of salvarsan.)

Epidemic Cerebro-Spinal Meningitis from a Bacteriological Standpoint. By K. R. Collins, Atlanta, Ga. Journal of the Medical Association of Georgia, February, 1915, pp. 292-293.

The writer calls attention to the importance of establishing a correct bacteriological diagnosis before treatment by anti-toxin is instituted in cases of cerebro-spinal meningitis, supposed to be due to the meningococcus intracellularis. Meningococcic anti-toxin is without effect in cases where organisms other than the meningococcus are the etiological factors. If this cannot be done before the administration of the first dose of anti-toxin, it should be accomplished before the second dose is given.

The promptness with which the fluid is examined after withdrawal from the spinal canal influences the success of the examination greatly. If the spinal fluid is found sterile, it is well to consider the possibility of the organisms being confined to the lateral ventricles.

Intelligent administration of anti-toxin reduces the mortality of cerebro-spinal meningitis due to meningococcus intracellularis 10 per cent.

Prophylaxis of the disease should be guarded against by proper examination of all contacts, as well as isolation of the patients. Vaccination of all exposed persons should be practiced as a means of prevention.

Paroxysmal Haemoglobinuria—Exhibition of Case. By G. A. Batton, Baltimore, Md. April 19, 1915. The Johns Hopkins Hospital Bulletin, February, 1915.

Male patient, 3½ years old. Family history negative except for positive Wassermann in mother and two sisters. Past history negative. Present illness began Nov. 1, 1914, with chill, fever, followed by bloody urine for one week. A similar attack began on Dec. 12 and was persistent on admission to the hospital three days later.

The positive points on examination were pallor, general glandular enlargement, enlarged liver, enlarged spleen, leucocytosis, hemaglobin 37 per cent. Urine was almost black, guaiac test positive, albumen and a few granular casts present. No. R. B. C. Patient was put in bed and urine became normal within twenty-four hours. A diagnosis of paroxysmal haemoglobinuria made. This later verified by test of Donah and Landstiner, who showed that haemolysis of the blood of haemoglobinuric patients took place if the temperature was first lowered and then raised. Blood Wassermann positive.

It seemed reasonable to explain the general glandular enlargement, the enlarged liver and spleen on the basis of hereditary syphilis and the anaemia as a result of this infection plus the severe haemoglobinuria. The relationship between syphilis and paroxysmal haemoglobinuria has been found to be a close one (Cook, American Journal Medical Sciences, 1912), inasmuch as 90 per cent of the reported cases give a positive Wassermann. However, the cause of a positive Wassermann in these cases is a disputed point.

The Biologic Classification of Pneumococci and the Serum Treatment of Lobar Pneumonia. By Frederic M. Hanes, Richmond, Va., April 16, 1915. The Old Dominion Journal of Medicine and Surgery, March, 1915, pp. 134-143.

Acute lobar pneumonia is caused by the growth of pathogenic pneumocci in the lungs. Until recently the pneumococcus was regarded as a homogeneous strain of organism since all pneumococci agree in their cultural and morphologic characters. By means of immunological reactions, especially agglutination and animal protection, Neufeld, Cole, Dochez, Hanes and others have shown that pneumococci can be divided into four groups, all the members of which possess common immunological properties. These groups differ in the severity of the pneumonia they produce and cause different mortalities in patients. It is, therefore, important for prognosis to know the strain causing a certain pneumonia. The strains or groups can be readily identified by a competent bacteriologist, and sera have been prepared by the Rockefeller Hospital New York, which promise to lower greatly the mortality of pneumonia. It must be insisted upon that in attempting to treat pneumonia by serum or vaccines the exact strain of pneumococcus must be identified. The paper contains interesting morbidity and mortality tables of pneumonia as observed at the Rockefeller Hospital.

TROPICAL DISEASES AND PUBLIC HEALTH

PRESENT STATUS OF LOCAL HEALTH ADMINISTRATION. THE OUTLOOK.*

By Oscar Dowling, M.D.,
Louisiana State Health Officer,
Shreveport, La.

In the hope that I might gather some new and interesting data on the subject of local health administration, in September I sent a letter of inquiry to a city and county officer in each state. Replies, more or less complete, were received from a number. One officer from the far southwest, with a touch of grim humor, answers as follows:

What form of local organization have you, health board or officer? Neither. Appointed or elected? Neither. What appropriation is made? None.

In a postscript he adds: "Three members of City Council appointed by Mayor for a health committee can suggest and advise, but otherwise powerless. God Almighty, high altitude 7,000 feet, constant sunshine, low humidity, and most excellent water system, seem to control health conditions."

I feel sure there are many men connected with health work in this country who sympathize thoroughly with the protest against conditions which we read between the lines of this postscript. Within twenty years in a few counties and a number of cities there has been great advance in health administration; efficient organization has replaced the chaos of former times; trained health officers have been chosen as directors, and fairly adequate appropriations have been made. This is more applicable to city than county government. But the examples of excellence—if indeed any may be so graded—are all too few, for in the great majority of these civic units there is health service in name only.

Our system of county government is an inheritance. It evolutionized through ages that knew not prevention of disease or modern efficiency methods. It is entirely inadequate and unsuited to present needs. The function of health administration which is a part of the county service is even less fitted to meet the need of an era scientific in its theory of management. The same may be said generally of health organization of cities and towns.

In every state there are laws and ordinances, many and varied, some well framed and suitable, some archaic; they are an attempt to meet the requirements, and to that extent they imply progress. The evolution of the science of social advance indicates they are the first step; but for all practical purposes in too many communities and commonwealths, they might as well not adorn the pages of the statutes.

The records received from the twenty-five states of different sections reveal like conditions to those with which we are familiar. When the consequences are considered they appeal as lamentable in the extreme. Certain defects, with few exceptions, are universal—lack of funds, selection of officers with no regard to merit, low standards of qualifications and a division of responsibility. These points stand out in the file of answers to letters. For example, briefly, as to salaries and appropriations:

Vermont—Population of city, 8,000. Health officer's salary $200 per annum.

Michigan—Health officer $300 per annum.

West Virginia—No appropriation except $150 a year salary, president of board.

Minnesota—village, 2,000 population. Salary health officer $100 annually.

Mississippi—County officer $600 per annum.

*Read in Section of Public Health, Southern Medical Association, Eighth Annual Meeting, Richmond, Va., November 9-12, 1914.

Illinois—$8.00 fee allowed for each house quarantined and disinfected.

Nevada—No funds for special purposes.

Wisconsin—None.

Kansas—Expenses about $1,000.

Iowa—No specific appropriation for local boards of health.

New York—Town. Health officer's salary $2,000.

Arizona—State board, $4,800.

Kentucky, Ohio, Missouri—Salaries run higher.

Nashville—Health officer's salary $3,000; operation $18,000.

Jersey City—$63,000.

While in each of these states there may be counties and towns which have well-paid officers, in general the above items will hold good. In Louisiana our records show about 70 per cent of the incorporated communities pay no salary to members of health boards, and some of these no salary to the health officer. Where there is compensation, the amounts range from $50 to $720 annually. Appropriations for health work, leaving out the six largest cities, average $310 per year.

To argue that effective health administration can obtain only when budgets are adequate, would be carrying coals to Newcastle. Health work is a business; to be successful it must be conducted on the same basis as any other business enterprise. The executive who would turn out from his factory a paying product employs expert service; he invests in labor-saving machinery; he spends to save. If a community would know its sanitary ills, it must pay for the service of a trained diagnostician; if it would avert-epidemics, it must invest in safeguards to health; if it would lower its budget items for courts, jails, lock-ups and institutions for the sick and unfortunate, it must open the purse to that end.

Before passing this point it is fair to say that the public, heretofore, failed to realize benefits from the funds appropriated. The health officer drew his salary because he might be needed and for writing stereotyped reports; the board, for meeting at irregular intervals with apparently no purpose save to adjourn. Even now there are many otherwise informed citizens who believe that because there are no epidemics, health officers are a luxury. The moral to this is that whatever amount—small or large—is appropriated, it should be so expended as to bring results apparent as far as possible to all those interested.

The second defect noticeable relates to boards—these are variously and, I may add, wonderfully constituted. In cities often it is the mayor and council, or commissioners, with the city attorney and a physician; sometimes laymen appointed by the mayor, or the city council with a physician. County boards are even greater conglomerates—chairmen of county supervisors with no other county officers; county commissioners with prosecuting attorney and physician; county commissioner with secretary; in townships, township clerk and township trustee.

Who, to-day, would call in a financier to treat a case of diphtheria, or a commercial expert to perform an operation for appendicitis; yet the powers of the city hall, men pre-eminently identified with party politics, or men whose interests are wholly apart from professional activities, are charged with the duty of administration in the most vital of all features of civic welfare. There are exceptions, of course, but the principle involved stands as an anomaly in a society which calls itself intelligent. Concurrently with this is the inconsistency of asking officials whose point of view is that health administration is secondary to the duties for which they were primarily elected. The city clerk cannot but consider the keeping of vital statistics as an unwelcome innovation, or as an addition to his work which he is to quietly ignore. Health work is difficult. The ordinary officer without pay or appreciation will not undertake it.

A lack of harmony and division of authority are also serious defects in the present system. If the health officer is appointed by one authority and the men who should support his policy by another, there may be effective service, but the probabilities are that there will not be, especially in a crisis. A division in authority means a division of responsibility, a

condition which may entail results most disastrous to the community in which it obtains

Every reply received except two, state that boards and officers are appointed. It is conceded that in the main these appointments are political. Usually no qualifications are necessary save loyalty to the appointing power. The consequences are far-reaching, not alone in the possible selection of men unfit by temperament or training, but in the relations of such appointees to the public. The man who goes into office with an implied obligation to favor one part of the citizen body will find it hard to be fair and just and firm in the execution of the many duties of the sanitary officer.

Without intent to exaggerate conditions, I think it clear one of our most important health problems is the ineffectiveness of our local health administration. While in England the county board has been made an efficient agent for control of conditions in the smaller communities in the area, with us it has been a failure. Likewise, in the small towns and villages, even the smaller cities, the local organization cannot be considered a success.

To quote from a recent excellent article by Dr. Phillips, under present conditions, "so far as the smaller communities are concerned, sanitary science might as well have ceased to advance at least one and possibly two decades ago." Any executive officer knows how true this is. Conditions in the towns, the rural districts and in many cities are pitifully pathetic. Life and health are sacrificed, business demoralized and civic progress retarded for the lack of a few dollars wisely expended by a trained executive officer.

An experimental remedy suggested some years since was inaugurated about eighteen months ago by Dr. A. B. Phelps, now Professor of Chemistry in the Hygiene Laboratory of the United States Public Health Service. It relates to the question of cooperative health administration. Applied by eight towns in the vicinity of Boston, it has met with such commendation that a continuance has been requested. The first consideration is that a number of communities can afford to pay sufficient to employ a full-time expert sanitarian. Where means of transportation are available, it is possible for one officer to fulfill the duties of the executive and carry on, himself, at least one other division of the work, unless the inhabitants should be too numerous. In 1912, I outlined a plan of this kind for seven towns along the Vicksburg, Shreveport & Pacific Railroad, and for five places in south Louisiana.

The objection that must be overcome in every community accentuates the political obstacle which prevails universally. These offices strengthen patronage, they give opportunity to add to the number who can be given a salary—however small—or be flattered by public notice. Few communities are ready to lessen the number of appointive officers or the contracts and favors which are the perquisites of dominant faction. Financial losses may threaten, disease prevail and lives be shortened, but what matter if votes are assured by gifts of office and salaries.

I think it cannot be doubted that the plan of cooperation in administration in the erection of utility plants, in the purchase of high-priced machinery, and electric transportation and other equipment will be put into effect. One water plant, one incinerator, one set of automatic garbage wagons would serve a number of towns in our state which are situated along the Southern Pacific in the good roads area, while automobile service would make possible medical supervision for infectious diseases. The success of this plan in the East gives hope that small communities of other sections may be convinced it is practicable to adopt.

In the letter from Dr. F. H. Edsall, Superintendent of Jersey City, there is a statement which also gives hope for better things. He says the health bureau of the department is in charge of the Superintendent of Health, "who is the executive officer of the bureau. He is chosen by competitive examination held

by the State Civil Service Commission and afterwards their recommendation is referred by the Mayor to the Board of Commissioners and they confirm the appointment as recommended by the mayor." From the western coast a county officer, Dr. Sawyer, gives evidence of the same change of heart. He writes: "The position is appointive, but is now under civil service."

While I do not believe that examination of candidates under civil service rules will be a panacea for all administrative ills, undoubtedly this requirement would raise the standard of candidates—at least it would help to awaken the public conscience as to the need for trained men in health service. The establishment of a standard, even though far below what is desirable, would be a forward movement; it would be the beginning of the end of political appointments.

The situation in local administration as it now obtains is a circle—one is tempted to say a "vicious circle." Inadequate appropriations preclude expert service, and without efficient officers to prove the value of excellence in administration and other features, health budgets are not likely to be increased.

I have dwelt on the defects of our present system of administration because they are fundamental. I am not unduly pessimistic because there is a steady advance, I know, in every section of the South, and I believe in every part of the union. But progress is slow—too slow when we reflect on the consequences of toleration of evils which could and should be controlled and abolished.

Confident in our wealth of knowledge and, therefore, power to alleviate suffering and add to the sum of human happiness, it is difficult to be patient with evils which seem the result of stupidity pure and simple. It is only by keeping in mind constantly that social reforms grow from the seeds of conviction and become established by means of an enlightened public that our courage meets the occasion.

DISCUSSION.

Dr. J. La Bruce Ward, Columbia, S. C.: I have been extremely interested in Dr. Jackson's remarks. Dr. Jackson is too modest to say it, but the success of the work in his town in Florida is due to Dr. Jackson's efforts.

Dr. Jackson: I do not know that that is so. They all work for us.

Dr. Ward: He may deny it, but nevertheless I believe it to be a fact, but unfortunately we have very few men like Dr. Jackson scattered throughout the South.

In regard to the Assistant Commissioners of Health as recommended by Dr. Jackson, who should be under the State Health Officer, that may work in Florida. We realize that Florida has one of the best State Boards of Health in the South, and has a larger appropriation than any other state in the South, but it would not work in South Carolina. We have forty-four counties. I believe that what we need is forty-four full-time county health officers who are paid by the counties, and regularly appointed by the State Board of Health. We have no county boards of health, fortunately, I believe. I believe that the county boards should be directly responsible to the State Board of Health, or the State Health Officer. I don't see how four or five men are going to do the work for forty-four counties. I believe we need a man for each county; a man who devotes his entire time to disease prevention, who will examine the school children and who will give lectures on disease prevention in general and, in addition, will prevent epidemics, which latter should be the test of his efficiency.

Dr. R. K. Flannagan, Richmond, Va.: The great need is as Dr. Ward has just stated, we ought to have full-time men in each county directly under the State Board of Health, but where, O, where are we going to get properly trained men. The emphasis must be upon county health work during the next generation, but we are forced to move slowly in this since support must come from an unenlightened rural population; but education, eternal education, constant and untiring, beginning as all education does, in the public school, at the very foundation of things, then reaching up. For even the medical schools have hitherto done little towards giving public health instruction.

Dr. Dowling (closing): With reference to getting people out to hear health talks, our plan is to give reports of inspections. On the health cars we carry men to do this work. We give at night public meetings at which motion pictures are shown, and one feature of the program is the results of the day's work. The condition of Mr. Blank's dairy, or slaughter house, or market is of local interest, and everyone wants to know what is said of the home people. To instruct in the simplest facts of hygiene we sent health bulletins to every school, about 200,000 a month. It is only four pages, but is an admirable plan for reaching children and adults. Every issue contains information and suggestions which appeal to both. We try to reach the old through the young. This was illustrated in the story told me by an old gentleman. He acknowledged he

went to the table with his fingers dirty. The children, by calling attention to his hands, caused him to leave the table and wash them. He said he'd "got the habit." Now he could not eat in peace until his fingers were clean. In one of the places where we stopped a woman who operated a grocery store where fresh meat, etc., were handled, was told that she must screen her place. She replied promptly, "flies didn't do no harm," and she did not believe in breathing "strained air."

We realize that in this educational work the co-operation of the doctors is most necessary, and, in courtesies shown us on the tours of the health cars, they have been most loyal. Almost without exception, in every place visited the coming of the exhibit is advertised, halls are provided for the evening program, and often automobile service offered the inspectors. The health officers, with few exceptions, are eager to have conditions investigated, and more than willing to have the State Board of Health assume the responsibility of telling in unvarnished truth and making application of the law.

Physicians and health officers often are aware of the dire need of enforcement of the regulations, but our system—if it can be called such—precludes their taking an aggressive attitude. Few men, in the interest of the public, will risk a lessened income—if they have families they owe them a duty first. Until our health officers are paid adequate salaries and physicians who do public work are assured of support in their public service, there cannot be thoroughly efficient health work.

The attitude of the public generally, and I regret to state, physicians also, toward patent nostrums is a case in point. The fraudulent claims of these companies are boldly flaunted in the pages of the public press. Because these columns are paid for, the poor and suffering are misled and deceived. It is difficult to get the support of organizations or individuals in the fight against this menace to health.

In Louisiana we have been fortunate in getting a bill passed which prohibits fraudulent statements of any kind relative to cures, devices, etc. We intend to do our part to have this law enforced, though in the beginning we realize it may not be a very popular movement.

THE CONDENSED SKIMMED MILK MENACE.

By M. M. Carrick, M.D.,
Dallas, Texas.

How many of our American dairymen have paused to consider the invasion from the war zone which is already affecting one of our greatest agricultural interests? How many farmers know that there is a growing menace to his dairy business against which he must speedily fortify? I refer to the canned milk industry in Europe that is already exporting to us in large quantities condensed skim-milk, and competing successfully with our own condensed whole milk. Shameful to relate, our American grocers are helping the invasion along.

For example, were you to go into a grocery today and ask for a can of condensed milk, the clerk would be very apt to carelessly call your attention to the fact that there is a Dutch brand which retails three cans for a quarter, a saving of three cents on each can. Nine cents is worth saving, you consider, and you immediately thank the clerk for the suggestion, taking the Dutch brand with his assurance, "It's just as good." But read the label on the can: "Condensed Skim-milk," and you immediately feel that you have been cheated. And so you have. This clever method of substitution is a trick of the grocer to sell an article upon which he receives a greater profit, and you are the unsuspecting victim.

Records show that in less than a year prior to the declaration of war nearly 100,000 cases of skim-milk product were imported to America. Then along came an American condensed milk manufacturer with an eye to competing with this European invasion.

Immediately he began to put out a similar product. Under our stringent pure food laws he was obliged to label his product "Condensed Skim-milk," but even so this announcement is as inconspicuous as possible.

The concensus of opinion among all reputable physicians is that if this product is to be sold, it should be labeled so conspicuously that all who buy it will see, "Not for Infant Feeding." Furthermore, the grocer should call the attention of the buyer to this, particularly if she is a woman, who no doubt contemplates feeding it to her baby. A skull and crossbones label might be more to the point if this milk is to be offered to mothers as a substitute for infant feeding.

Skimmed milk is all right in its place. We

all know that it is a by-product highly esteemed as a food for pigs and other domestic animals. All farmers realize its value in poultry feeding, and it is often fed to cows with good results; but they know that the "results" are only in proportion to the amount of the normal constituents of the milk retained after the cream is extracted. Skimmed milk contains the principal part of the nitrogenous constituents of milk, the greater part of the sugar, and a large quantity of its mineral matter which still makes it a valuable food product, lacking only the elements of fat. Were fat-supplying foods, such as nuts, olive oil, etcetera, eaten with skimmed milk, it would be a perfectly balanced food.

The chief objection of the laity against skimmed milk is that it so frequently masquerades as whole milk, as does the Dutch product, and even the new American output: for despite the label which our pure food laws insist upon, the gullible public rarely reads or comprehends this fact. We seem willing to be duped, if we pay a little less for the imposition—quantity rather than quality overruling. False economy is causing much misery in the world.

While European countries are passing through this great crisis, that has already been ruinous to their industrial and financial interests, now is the time for us to fortify against invasion to our own interests. The American dairy-farmer should grasp this opportunity to intrench his business against the foreigner's attack, such as that of the skimmed milk industry. Why let Europe usurp one of our greatest agricultural achievements? Is it not worth protecting and fostering, when we consider that our condensed and evaporated milk industries use about 1,300,000,000 pounds of whole milk each year, which at the average price of $1.50 a hundredweight paid by the condensers to dairymen gives a $20,000,000 income to the dairy farmer? According to an authority, our total output of butter, cheese and condensed milk is valued at $600,000,000. Our total production of orchard fruits is valued only at $140,000,000 a year. These figures speak for themselves.

Yes, surely now is the time for the American dairy-farmer to study the condensed and evaporated milk supremacy in Europe and post himself as to our own economic inefficiencies, thus showing us how to protect, foster and intrench before it is too late.

FILARIAL INFECTION—AN INVESTIGATION OF ITS PREVALENCE IN CHARLESTON, S. C.*

By F. B. Johnson, M.D.,
Associate Professor of Clinical Pathology and Bacteriology, Medical College of the State of South Carolina; Director of the Clinical Laboratory, Roper Hospital, Charleston, S. C.

The object of this paper is to emphasize: First, the prevalence of filarial infection in the South; second, the advantage of using a method of concentration of the blood, so that larger quantities may more readily be examined in searching for microfilaria; third, the relation of symptomatic filaria, by general consent called "filariasis," to filarial infection.

Filaria is known to be a common parasite in many tropical and subtropical countries, according to Manson[1], being found indigenous as far north as Spain in Europe and Charleston, S. C., in the United States of America, and as far south as Brisbane in Australia.

In China from 10 to 50 per cent of the people harbor the worm. In India, in one district alone, about one-third carry microfilaria. In Samoa one-half of the natives, and in the Friendly Islands, according to Thorp, 32 per cent harbor the filaria. On the Island of Guam, from an examination of 244 individuals, G. B.

*Read in Section on Medicine, Southern Medical Association, Eighth Annual Meeting, Richmond, Va., November 9-12, 1914.

Crow[2] found 5 per cent infection. Among the Fijians, Bahr[3] states that it is possible that at one time or another nearly every Fijian is the subject of filariasis, because 27.1 per cent were found to harbor microfilaria in their blood, and others were found to suffer from filarial diseases when no microfilaria could be found in the blood; and lastly, in patients under observation, the microfilaria have disappeared from the blood.

The extent of infection shows an unequal distribution in even different parts of the same country, being in general more common along sea coasts and the banks of large rivers, but presenting peculiar circumscribed endemic areas[4]. In Southern Nigeria Foran[5] found in 543 bloods obtained at night 3 per cent infection with microfilaria bancrofti and 8½ of M. perstans. Among 700 Lagos natives of West Africa, A. Connal[6] found a total infection of 25.22 per cent of either filaria loa or filaria bancrofti; filaria bancrofti alone only accounting for about 4 per cent of the infections.

In Porto Rico, Ashford[7] showed 12 per cent of the soldiers harboring microfilaria; 20 per cent of the natives having chyluria. In 1890, deSaussure[8] published the clinical histories of 22 cases of filaria sanguinous hominis seen in Charleston, S. C., from 1886 to 1890. Various reports have been made from time to time of cases of filariasis in the South, far too numerous to mention. No direct reference can, however, be found by me in regard to the percentage of filarial infection that occurs.

Recent examinations that I have made of 400 individuals in the city of Charleston, S. C., show 19.25 per cent harboring microfilaria in their blood. The majority of those examined were from the wards of the Roper Hospital, taken in order of admission and without regard to the disease for which admitted; a certain number were from the emergency departments and others from outside, apparently in good health. While it is admitted that those examined include only a few of the better class of people, 19.25 per cent of infection among them is sufficient to show that it is extremely prevalent.

In 1909, by the use of a method of placing four large drops of blood upon a slide and covering with another thin slide, ringed with vaseline, microfilaria were found by me in 9.8 per cent of 131 bloods examined.

For this last series of 400 examinations, a method for finding microfilaria in the blood as advocated by Rivas and Allen J. Smith[9] was adopted. This consists in adding 1 c.c. of blood to 9 c.c. of 2 per cent acetic acid, shaking thoroughly and centrifuging. The erythrocytes become hemolyzed and only a small amount of sediment is found in the tube; all of this is spread upon one or more slides and examined microscopically. This method of concentration enables one to examine larger quantities of blood, and the embryo are more readily found.

Those examined may be classified as shown in Table I.

Table I.

Results of the Examination of 400 Individuals in Charleston, S. C., for Microfilaria.

	No. Examined.	No. Infected.	Per cent Infected.
White females	50	14	28
White males	50	9	18
Colored females	150	29	19.3
Colored males	150	25	16.7
Total	400	77	19.25
White males and females	100	23	23
Colored males and females	300	54	18
Females, white and colored	200	43	21.5
Males, white and colored	200	34	17

It is seen that the highest percentage of infection occurred among white females, of whom 50 were examined and 28 per cent were found to have microfilaria in their blood. Of 150 colored females examined, 19.3 per cent were infected. Fifty white males showed 18 per cent, and in colored males the lowest percentage of infection was found, *i. e.*, of 150 examined, 16.7 per cent were carriers of microfilaria.

The white race showed a higher percentage of infection than the colored; the total percentage for the whites being 23 per cent, that for the negro being 18 per cent. All females, including white and colored together, showed 21.5 per cent having microfilaria, and all males of both races taken together showed 17 per cent infection. Connal[10] in finding 25.2 per cent of infection among the Lagos natives of West Africa, found only one female infected out of 43 examined.

The higher percentage of infection in the white race over that of the negro may possibly be explained, that infection in the negro has been for a longer period of time and they have acquired greater resistance, the general opinion being that filaria was introduced into this country by the negro from Africa.

The blood for these examinations was taken from the ear or finger usually between the hours of 10 and 12 p.m. In 30 cases showing microfilaria at this time, another examination was made at about 11 a.m. to ascertain the value of the method described for the detection of the embryo in the peripheral blood during the daytime.

These 30 cases, as seen in Table II, showed a marked variation:

Table II.

Comparison of Day Examinations to Night Examinations in Thirty Cases of Filarial Infection.

Case No.	Night 11 P.M. No. per c.c.	Day 11 A.M. No. per c.c.
1	2114	1179 1188°°
2	1650	346 325°°
3	1583	154 44 108
4	1464	98°°
5	1254	40
6	1000	46
7	808	19
8	745	15
9	476	26
10	454	25
11	400	14
12	220	15
13	160	0
14	140	2
15	60	3
16	60	2
17	52	0
18	50	17
19	48	4
20	46	3
21	41	0°° 0
22	40	1
23	28	0
24	24	0
25	20	0
26	11	1
27	6	0
28	4	0 0
29	3	0°°
30	3	0

In the number of microfilaria found at night, varied from 2114 per c.c. in Case 1, to 3 c.c. in Case 30. In all but 10 of these cases microfilaria were found during the daytime. The number found in the day varied in approximate proportion to the number found at night; *i.e.*, the embryos were found during the day in all cases that showed 220 per c.c. or over at night, and only in 2 of 10 cases showed 41 per c.c. or less at night.

In six cases, as also shown in Table II, a comparison was made of the number of microfilaria in the capillary and venous circulation during the daytime. In four of the cases the number was nearly the same, the capillary blood showing a slightly larger number than the venous; in the other two cases no embryo were found in either capillary or venous blood during the day.

From appearance and measurements given by Low[11], the microfilaria found were the embryos of filaria bancrofti. These embryos were not, however, identified by measurements in each particular case. It is, of course, possible that other species of filaria exist here, but I was unable to find any other species in the blood of man. Braun[12] seems to think that dirofilaria immitis may possibly be found

°° Blood taken from vein at elbow.

in man. This is a very common infection of the dogs around Charleston, and if infection occurs there would be good opportunity of observing it here.

In three cases an investigation was made in regard to the length of life of microfilaria in the blood after being withdrawn, four large drops of blood being placed upon a slide and covered with a very large cover glass, ringed with vaseline to protect from drying out. On slides kept at room temperature embryos were seen motile for ten and ten and a half days. In one of the specimens placed in the refrigerator at about 9C. microfilaria were found alive up to thirteen and a half days. The specimens placed in the incubator at 37.5C. lived only about two and a half days. No actual development was observed in any of the microfilaria, though in one of the refrigerator specimens, after ten days, an absence of outer sheath was observed.

Of the 77 cases of filarial infection found in my examinations, in only 20, or 25.9 per cent, could a history of filariasis be obtained. Nine had had chyluria or hemato-chyluria; one of the cases of hematochyluria had also a pleural effusion, in which microfilaria were found in the fluid after aspiration. Three had elephantiasis; one of these cases had elephantiasis of both legs—gangrene of one leg occurred for which the leg had to be amputated, later the other leg had to be removed also. Two cases had lymphscrotum, one of which showed ulceration and sloughing. One case was a hydrocele, presumably chylocele, though I was unable to examine the contents of the sack and demonstrate microfilaria therein. One case of filarial phlebectasis, or varix, of both legs was also found. This man had also a cardiac valvular lesion and nodular masses, about the size of a pea, along the course of some of the superficial veins, resembling phleboliths, but not attached to the vein. One case of chyluria had also a synovitis on the back of one of his hands that became inflamed intermittently; the contents of the sack were examined for microfilaria, but they were not found. A case whose history bears going into more fully was that of a man on whom a diagnosis of syphilitic cirrhosis of the liver was made, having a strong positive Wassermann; two and a half gallons of ascitic fluid withdrawn from the abdomen showed the presence of many live microfilaria and also contained fat and a few blood cells. Another case that may be mentioned was that of a woman who showed a marked general lymph-glandular enlargement and gave a history of frequent attacks of lymphangitis, occasional abscesses, and nodular, inflamed areas under the skin, disappearing in three or four days. These areas felt hot and were painful. I have not had the opportunity of seeing these myself, but the history is that of calabar swellings. Microfilaria bancrofti were found in her blood both day and night and no embryo of loa loa. Castellani and Chalmers[13] state that there are possibly other species of filaria or allied genera besides loa loa, which may produce calabar swellings.

Microfilaria were found in the blood of the three cases of elephantiasis mentioned, but in the examination of three other cases of elephantiasis no microfilaria were found; also in one case of hemato-chyluria no embryo were found in either blood or urine.

The ages of those examined were from four days old, an infant whose mother had filariasis and which was negative, to that of a man 103 years old, whose blood showed microfilaria. The youngest age at which I found the embryo was in a boy 6 years old. The highest percentage of cases was found in those past middle life.

The diagnoses on which those examined from the Roper Hospital were admitted, included practically all the diseases one usually finds in a Southern hospital. Forty diseased conditions were represented in those showing filarial infection. There appears to be no special relation, than already mentioned, of these diseases to filariasis. On account of the presence of other conditions in the majority of those examined, the value of blood counts on these cases of filarial infection is open to ques-

tion. Parasitic infections and suppurative conditions occurred in several. The highest eosinophilia found, however, was 9.5 per cent.

Besides these examinations made in Charleston, thirty bloods obtained during the day at Plantersville, a rural district near Georgetown, S. C., through the cooperation of Dr. A. B. Clark, were examined for microfilaria. No embryos were found in any of these cases. Dr. Clark has given me, however, histories of several cases of filariasis that he has seen in his practice, so these thirty examinations are not sufficient, in my opinion, to exclude filarial infection in that neighborhood. Infection would appear, though, to be more prevalent in more thickly populated centers than such rural districts as the one mentioned.

In answer to the question, "What is the approximate number of cases of filariasis that you have seen in your entire practice?" the sum total from fifty physicians (representing about two-thirds of the physicians in Charleston) was 494 cases; chyluria, 244; elephantiasis, 213; both chyluria and elephantiasis, 8; other symptoms, 4; not stated, 25. In considering the report of these cases, allowance will have to be made for some of them being seen by more than one physician and therefore reported more than once, as names and addresses could be obtained in only a few to prevent this repetition.

Even this number of cases in proportion to population would give less than 1 per cent having had symptoms of filariasis, while in comparison, my report of finding twenty cases of filariasis in the routine examination of 400 individuals, would give 5 per cent. The disparity between these two percentages cannot be explained.

The following conclusions may be made:

1. Filarial infection is extremely prevalent in Charleston, S. C.; there is no reason for assuming this to be the only place in the South showing such a high percentage of infection.

2. The acetic acid method offers the most serviceable way of detecting microfilaria in the blood; in most of the cases it being possible to demonstrate them in the blood during the day, as well as at night.

3. In the majority of cases of filarial infection no symptoms may be produced by the worms. The finding of 19.25 per cent of filarial infection and 5 per cent filariasis in 400 routine examinations is sufficient to show that even filariasis is more common than general reports would lead one to believe. Filaria cannot be classed as a harmless parasite, for, as already mentioned, certain types of infection have a decided pathogenic effect.

REFERENCES.

1. Manson, Tropical Diseases, 5th Edition, p. 668.
2. Crow, A. M. A., Vol. LV, No. 7, p. 591.
3. Castellani and Chalmers, Tropical Medicine, 2nd Edition, p. 1126.
4. Ibid, p. 1125.
5. Foran, Jr., Tropical Med. & Hyg., Feb. 25, 1910.
6. Connal, Jr., Trop. Med. & Hyg., Jan. 1, 1912.
7. Ashford, Medical Record, 1903, p. 724.
8. deSaussure, Medical News, June 28, 1890.
9. Rivas and Smith, Southern Med. Journal, Vol. 5, No. 9.
10. Connal, Loc. Cit.
11. Low, Jr., Trop. Med. & Hyg., Jan. 2, 1911.
12. Castellani and Chalmers, Tropical Medicine, 2nd Edition, p. 525.
13. Ibid, p. 1443.

DISCUSSION.

Dr. C. C. Bass, New Orleans: I desire to express my appreciation of the very valuable contribution that has been made to this subject. It is one of the best original pieces of work I have seen in a considerable length of time. It calls our attention to the existence of a condition or infection and actual disease that, in all probability, is very prevalent throughout the entire country. It simply serves to remind us again of the fact that we are pursuing diseases to the limit. We have been seeing these cases for many, many years; they are widely distributed and still absolutely unrecognized. We can recall only a few years ago, when the first cases of hookworm disease had been recognized, in discussing the subject with a doctor or a group of doctors, and describing and presenting cases, one doctor would say, "I believe I have had cases of that disease in my practice." He would recall a family in which maybe one child had the disease. As a matter of fact, seventy-five per cent of all his patients had that disease. Later study has taught us so. It is quite possible that the same idea may be applied to some extent to such a disease as filaria is. This paper is a call to all to begin to look for filarial infection. There is no doubt that there has been more or less unsystematic and not

extensive search made for filaria, usually without success. Occasionally cases have been found in other sections besides Charleston, in the South, but the technic employed, as shown by Dr. Johnson's work, would not have permitted finding a large number of cases. Recently my attention was called to the technic employed in our laboratory in looking for filarial embryos in cows. All cows in the South have filaria apparently. It is a universal infection with cows. The technic employed was to take ten c.c. of blood, defibrinate it, and then centrifuge. The filariae go to the top of the cell mass, and then that is skimmed off and examined. It was found in several instances that ten c.c. of blood often contained only one, two or three filaria. I would not be surprised if one c.c. would not fail to demonstrate filaria in many instances in the blood of man when a larger quantity would show them.

Again I congratulate the essayist on his valuable and instructive contribution.

Dr. James V. Freeman, Jacksonville, Florida: In the first place, I desire to express my appreciation of this excellent paper, and in the second place, to speak of a curiosity we found in our service at St. Luke's Hospital the past year in a case of bilharziosis. These cases are so uncommon in this country that they can be counted on the fingers of the hand. The interesting point about this particular case is that this woman never lived outside of the United States. She had lived in two cities, Chicago and Philadelphia. She had this bilharzia infection seven or eight years. The earliest manifestation was a pneumonic process, which ran quite an atypical course, and the features of the case were such that we suspect she had a bilharziosis of the lung. Under our observation she showed irritation of the rectum, the vagina and bladder. The ova were found abundantly in the urine. She had an erosion of the cervix, and was sent in as a case of epithelioma of the cervix uteri.

Dr. F. B. Johnson, Charleston, South Carolina (closing): I wish to express my thanks to the gentlemen for their remarks and also to tender my thanks to the physicians, nurses and other individuals through whose co-operation this investigation was made possible.

That the percentage of filarial infection proved to be higher in the white race than the colored came as a surprise to me. This is also shown in the symptoms produced; that is, of the whites infected thirty per cent showed symptoms, and of the colored twenty-four per cent; also from the fact that in the five per cent showing symptoms, of the four hundred examined, the relation of white to colored is seven to four. Chyluria appears to be the most frequent manifestation of infection, though elephantiasis occurs quite frequently. In whites the elephantiasis affects most frequently the legs; in the negro women the vulva is more frequently affected than other parts. We have several cases operated upon every year; that is, removal of the labia because of the elephantoid condition. White females showed about ten per cent infection of symptomatic filaria, or filariasis, and colored females about five per cent. This disease appears here to have spread to the white race, and, finding a more fertile field, is showing more of the symptomatic manifestations.

I believe if this simple technic of examining for microfilaria is carried out, even in the daytime, we would find a great deal more of filarial infection and the associated conditions in the Southern States than we do at present.

AUTHORS' ABSTRACTS.

Tropical Diseases and Public Health.

Impounded Waters. By J. A. A. Le Prince, United States Public Health Service, Washington, D. C. Public Health Reports, February 12, 1915, pp. 473-481.

After water was impounded by the dam near Lock No. 12 on the Coosa River, Alabama, many cases of malaria were reported to the State Health Officer. The existing conditions were studied during October and November, 1914, to determine to what extent this impounded water increased Anopheles and the spread of malaria. The company using the water had cleared certain large areas to prevent mosquito production, but were unaware of the proper method of procedure for Anopheles control in flooded areas. The examination showed Anopheles-quadrimaculatus to be developing in but two limited areas, while Anopheles-punctipennis in all stages of development were present and numerous in many of the wind-protected inlets. Adult Anopheles were found in natural resting places near propagation areas. Apparently at that season two important factors aided Anopheles propagation in the lake. First, the marked scarcity of top-feeding minnows; second, the presence of floating pine needles, particularly in wind-protected inlets. The larvae were invariably present in collections of pine needles and frequently absent in other collections of floating debris. The elimination of brush, floating pine needles, small twigs, etc., is of greater importance than the removal of large standing trees or logs.

A New Bacterial Disease of Rodents Transmissible to Man. By William B. Wherry, Cincinnati, Ohio. United States Public Health Reports, December 18, 1914.

A plague-like disease of California ground squirrels was described by McCoy and Chapin (Public Health Bulletin 43, United States Public Health Service, Washington, 1911; Ibid. No. 53, 1912, and Jour. Infect. Dis., 1912, Vol. X, p. 61), to be caused by a very minute bacterium which they named bacterium tularense. Wherry reviews the reports, made by himself and B. H. Lamb, on two cases of human infection with this virus. (Jour. Infect. Dis., 1914, Vol. XV, pp. 331-340, and Jour. Amer. Med. Assoc., 1914, Vol. LXIII, p. 2041.) Both cases exhibited ulcerative conjunctivitis, and regional lymphadenitis, accompanied by marked prostration; and gave histories of having dissected rabbits shortly before the onset of the disease. Two rabbits, found dead on a farm near Vevay, Ind., were proven to be infected with the same virus. They suggest that the disease is probably widely distributed among rodents and that infection among those

handling such wild game may occur frequently. Diagnosis is best made by injecting suspected material into guinea pigs or rabbits. These animals died, on injection with material from man, in about six days, and showed, post-mortem, marked congestion of the internal organs and numerous yellowish-white foci of necrosis in the spleen and liver. The virus can only be cultivated on hen's egg-yolk solidified to just the right consistency and is demonstrated with difficulty in the tissues owing to its weak affinity for aniline dyes. Aniline-water, Hoffman's violet or gentian violet is recommended.

The Laboratory Diagnosis of Bubonic Plague. By J. F. Anderson, Washington, D. C. American Journal of Public Health, February, 1915, pp. 147-154.

In this article Anderson discusses the laboratory diagnosis of bubonic plague, with special emphasis upon the value of the naked-eye findings in natural rat plague. These naked-eye appearances are: (a) Subcutaneous injection, (b) the bubo, (c) granular liver, (d) condition of the spleen, and (e) pleural effusion. He discusses in some detail these various lesions and their relative significance and in a table gives the percentage in frequency of the various lesions as observed in bubonic plague. In San Francisco the average frequency was found to be, for subcutaneous injection, 71 per cent; bubo, 52 per cent; granular liver, 53 per cent; large, dark spleen, 71 per cent, and pleural effusion, 67 per cent.

The author states that it is not usual to find all five lesions present and that no single sign, of itself, is pathognomic, but it is the combination of two or more signs that is of moment. The subcutaneous injection, with a typical liver, or these signs associated with a typical spleen, afford good grounds for a diagnosis.

The presence of a typical liver and pleural effusion usually mean plague, and if a large, dark, firm spleen be present, the diagnosis of plague may be made.

The author discusses further the importance of the various procedures in the diagnosis of bubonic plague.

The Treatment and Prevention of Pellagra. By Joseph Goldberger, C. H. Waring and David G. Willets, U. S. Public Health Service, Washington, D. C., April 8, 1915. Public Health Reports, Oct. 23, 1914. Revised Edition, Jan. 15, 1915.

Pellagra is dependent on a faulty or defective diet. Although the essential nature of the "fault," that is, whether it is due to the presence in the diet consumed of an excess of an intoxicating substance or to an absence or deficiency of a detoxicating substance, vitamine or amino acid, or to some combination of these or similar substances is undetermined, it may nevertheless be prevented or corrected by including in the diet a sufficient proportion of the fresh animal or leguminous protein foods.

As long as clinical evidences of pellagra are manifest the patient should be urged to take an abundance of fresh milk, eggs, fresh, lean meat, beans or peas (fresh or dried not canned), and corn or other cereal and starchy foods should be greatly reduced in amount or excluded. Drugs are not regarded as having any specific value; the diet is of specific importance and should be prescribed with due care to see that it is eaten. Rest and careful nursing are important. Protect the patient from the sun. A change of climate is not essential. The patient having improved must be warned not to return to the former faulty diet.

The prevention and eradication of pellagra will depend essentially on the substitution of a mixed, well-balanced, varied diet for a restricted, one-sided diet. Secure proper "balance" by restricting the amount of the cereal and increasing the fresh animal or leguminous protein foods. J. G.

A Campaign Against Quacks. By W. A. Evans, Chicago, Ill. American Journal of Public Health, January, 1915, pp. 30-35.

When we include venereal diseases among contagious diseases the relations of quacks and patent medicines will be evident. In accepting or rejecting advertisements for the Tribune no medicine claiming curative powers, no alcoholic liquors and no habit-forming drugs are accepted. The capital of the quack is publicity; the remedy is publicity. A healthy young reporter was drilled in symptoms denoting no disease whatsoever. He went to a notorious advertising quack and asked for examination and treatment. He was told to return next day with a sample of urine. He submitted some distilled water slightly tinted with anilin. A protracted, pretentious analysis found a terrible array of threatening diseases.

He was congratulated on having come in time. They gave him a bottle of red liquid and some pills and told him to come again next week. The bill was $50.00, but they reduced it to $35. He had only three dollars, so they took that, and told him to report once a week. The whole story, with names and addresses, was published. It brought a flood of letters from people robbed by quacks, and they made good reading. The effects were instantaneous, magical and far-reaching.

Nearly all the newspapers threw out all advertisements of doctors. Today the one great field left for quackery is venereal disease, for patients fear to confess to their family physicians.

The Negro as a Problem in Public Health Charity. By Lawrence Lee, Savannah, Ga. American Journal of Public Health, March, 1915, pp. 207-211.

The negro is a focus of infection for syphilis, tuberculosis, typhoid and other infectious diseases, and is a constant danger to the community. These conditions can be best combated by public charities, such as schools, hospitals, poor houses, dispensaries, and visiting nurses.

The negro will not provide these improvements for himself. Where he came from he was a savage, and over one hundred years of opportunity to advance finds him almost where he started. He has done little or nothing for himself. He owns so little property that he pays practically no taxes and earns little right to public charities.

However, the whites, for selfish reasons if for no other, in order to protect themselves from the constant menace of the unhiegenic negro to the public health of the community, will have to provide the negro with better public charities than exist at present.

EYE, EAR, NOSE AND THROAT

ASTHENOPIC SYMPTOMS RELIEVED BY CORRECTING SLIGHT ERRORS OF REFRACTION.*

By T. W. Moore, M.D.,
Huntington, W. Va.

Since Weir Mitchell wrote his very instructive papers in 1874-1875, calling attention to eye strain as a cause of headache, nearly every functional neurosis has been attributed to this cause. The pendulum swung to the other extreme as it usually does before reaching its true position. It is not the purpose of this paper to enter into a discussion of the various claims that have been made, but to call your attention to some symptoms that have been very distressing, both to the patient and physician, and have been relieved entirely or much mitigated by the correction of errors of refraction so slight as to be regarded as almost or entirely neglible.

There is no room for doubting that these patients have a marked neurotic tendency, but in all branches of medical work it is this class of patients that require the greatest attention and demand the most careful thought and diagnostic ability, and when we have satisfied ourselves as to the source of such patients' discomfort, the apparently slight departure from the normal taxes our therapeutic resources to the utmost to produce a condition that will admit of the individual pursuing his avocation.

Some years ago a male patient age 22 came to me complaining of "eye pain," smarting and burning of the eyes, especially after doing near work, and more particularly by artificial light, followed by headache if the use of the eyes was continued. I found a slight conjunctivitis vision VI/VI each eye improved by a +.25D cyl. ax. 90. With homatropine cycloplegia he accepted the above with a +.25D Sp., which was confirmed by retinoscopy. I prescribed the cylinders as above and some astringent lotion for the conjunctivitis, the latter yielded readily to the treatment, but he insisted that the glasses produced a drawing of the eyes that was intolerable, but still the eye pain continued after near work without the glasses. I concluded that it was altogether nervousness and would try suggestion, and gave him plane glass for constant wear. His discomfort became more pronounced. I made another examination with the same results as before and prescribed +.12 D. Cyl. ax. 90, which the patient wore with entire relief, and two years afterwards wrote to me for a copy of his prescription, stating that he was unable to do without his glasses, which he had broken a few days before.

A teacher, female, age 34, came complaining of headache that began in the school room about noon and gradually grew worse until school ended, and she could lie down and keep her eyes closed. Her physician, a very competent man, said that he had carefully watched her for several months and could find no cause for her headaches, and felt sure that they were due to eye strain. The most careful examination failed to reveal any error of refraction, but showed a muscle in balance of two prism diopters of convergence. I prescribed prisms of ½° prism diopter base out for distance with the most satisfactory results. This patient came to me two years before this for examination of the eyes, complaining of sensitiveness to bright light, and at that time I found nothing but the convergence, but did not deem it of sufficient import to justify correction. Eight years after I prescribed she came complaining of eyes becoming tired when reading by artificial light. This I attributed to beginning presbyopia and prescribed +.50 D. Sp. without the prisms for reading, which were affording relief six months later.

In 1908 a married woman came complaining of constant headaches which she was sure did not come from her eyes, as her glasses suited her perfectly. I found her wearing R. E. —3.00 D. Sp. L. E. —3.25 D. Sp., which gave VI/VI vision of each eye. Examination under a cycloplegic showed R. E.—2.75—.25 C. A. 90. L. E. —2.75—.37 C. A. 180. This patient came to me five years later stating that she had been having a headache for several days and she suspected her glasses again needed changing, saying that she had been free from headache since I prescribed for her. I found

*Read in Section on Ophthalmology, Rhinology, Otology and Laryngology, Southern Medical Association, Eighth Annual Meeting, Richmond, Va., November 9-12, 1914.

that she had a temperature of 102°. I referred her to her family physician. She came to me again this year, saying that she was free from headache, but suffered much with dizziness. I found the left eye unchanged, but with a cycloplegic she would not accept the cylinder over the right eye; this was confirmed by retinoscopy. A few weeks ago her husband brought her broken glasses to me, stating that she had tried her old lenses since breaking these and that the dizziness had recurred.

A stenographer, female, age 31, came complaining of general fatigue associated with slight headache after doing any close work. I found patient wearing R. E. —.25 cyl. ax. 145, L. E. —.25 cyl. ax. 130, which she had worn for over four years with comfort until a few months ago. Examination without a cyclopegic revealed nothing excepting that the axes should be right 55° and left 130. This was confirmed by the ophthalmometer. After using homatropine, I prescribed R. R. +.50 cyl. ax. 55, L. E. +.37 cyl. ax. 130. You will observe that the axis of this convex cylinder over the left eye is the same as that of the concave cylinder she was wearing. In three days she came back saying that she did not know whether she was worse or better than before I had changed her lenses, but that she was very uncomfortable. I persuaded her to persist for two weeks with them. This she did with entire relief.

These four cases occurred to me since I began this paper, all of which were errors so slight as to be easily overlooked, but causing great discomfort.

I feel sure that it is needless to mention to this body that the ophthalmometer and retinoscope often attract our attention to these small errors that are easily passed over without being detected by the trial case alone. Also how very necessary that a reliable cycloplegic be used. Another very valuable point is that the instillation of a miotic after cycloplegia is positively contra-indicated in these neurotic types, if its use is ever the best practice, although prolonged cycloplegia is not as successful as we might expect, for these patients are very prone to take up their old ills when restored to their old environment.

I have tried to cite cases in which suggestion apparently did not enter, although one who has confidence in any method is much more likely to find it successful than a more skillful practitioner with less assurance, which is probably due to his patients being imbued with some of his enthusiasm.

DISCUSSION.

Dr. C. R. Dufour, Washington: I think that when a gentleman takes the trouble to prepare a paper it should not go in absolute silence. All of us who are doing refraction work come across these cases where slight errors of refraction are very materially helped and the patient made more comfortable by correcting them. I have never corrected anything less than a quarter of a diopter, although I have seen articles claiming good results. I think some of our New York friends claim to get good results from small corrections of a quarter and less. I was in New York not long ago talking with one of the younger ophthalmologists. He said he never used homatropin, that he did not believe homatropin paralyzed accommodation sufficiently to get the good results, that you never got the perfect results under homatropin that you did under atropin, that he used atropin—I think he was connected with the Manhattan Eye and Ear —they use atropin entirely. I asked him how it was that the patients there would submit to it. In my city the patients would not submit to a week's non-use of the eyes. The question of a myotic after using atropin is one that we have to consider with a great deal of care. That has been my experience sometimes in regard to homatropin. As a rule, if I use a mydriatic I use homatropin, about a 2 per cent solution, a couple of drops in the eye every ten or fifteen minutes for an hour, and in that way I get a pretty good paralysis of the ciliary muscle, and yet with the shadow test; the skiascope; sometimes the results are puzzling; it does not seem that you have put the ciliary muscle entirely at rest. In my refraction work I make the three methods agree—the ophthalmometer, the shadow test, and the ophthalmoscope, and then the court of last resort is the trial case. This matter of refraction by the optician is one the doctor did not mention, but it seems to me we should have some law requiring that refraction should be done only by graduate physicians. The optician does not understand the underlying principles. In our city we have these refracting opticians who will put glasses on anybody. I have had patients come to me with serious intra-ocular disease on whom the optician had put glasses. Both the optician and the patient entirely ignorant of the grave condition in the eye.

Dr. J. F. Woodward, Norfolk, Va.: The subject of Dr. Moores' paper is a very interesting one, and one that is too often overlooked. I think the reason that it is overlooked is that we are in too great a hurry to get through with our day's work. If you will examine the eye before and after using the drops and not depend simply on the homatropia you will more often prescribe and get results with simple astigmatic glasses. The mydriatic very often obscures just what you are looking for.

Dr. Dufour: As a rule, if I use a mydriatic, I make the three examinations, before, during and after.

Dr. W. P. Reaves, Greensboro, N. C.: In connection with refraction, I would say that I always add one to it, that is, I look at the nose in every case practically that I examine, because a great many times the error of refraction is only a part, and the rest of the trouble is in the nose. I have seen cases that had been refracted a number of times, and then do something to the nose and they would get perfect relief.

Dr. R. W. Bledsoe, Covington, Ky.: Dr. Reaves took the liberty of digressing; I am going to follow suit. Just recently I had a case of a lady of about 45 suffering with what appeared to be glaucoma. After very carefully studying the eye I could not make anything else out of it until I examined into the nose. I found all the trouble there, and after treating the nose carefully the glaucomatous symptoms have entirely disappeared and original glasses are perfectly satisfactory. The lady is able to see better than she has for months.

Dr. R. G. Buckner, Asheville, N. C.: I believe that there is a very much larger percentage of asthenopic symptoms in very slight errors than in high errors. That is generally well known, I believe, and the percentage is larger, I believe, than we sometimes think. And I was glad to hear this paper, because it corroborated one or two cases in my recent experience where I had only a 1-12 diopter cylinder in one and a 1-4 cylinder in the other eye, and I felt like I hated to take the money for testing the eyes for such a low error, where one eye had practically no error of refraction and the other had very little, but the patient a few weeks afterwards broke one of the lenses and sent back to have a new one made and stated that there had been relief from the headaches and the burning sensation in the lids and the watering of the eyes and the blurring of the print. Then there were two or three other cases of the same kind. Now, it has not been many years since refractive errors under one diopter were not corrected much. A generation ago there were very few cases where errors under one diopter were corrected, so that all these asthenopic symptoms in most cases went unrelieved.

With reference to the mydriatic to use, atropin puts the eye out of commission too long, and hyoscin also about five days. Homatropin two days, or fifty hours. I have been accustomed to use one grain each of homatropin and cocain to the drachm, and I used to instil it every five minutes until six drops were used. I have found that I have fewer cases that I have to reinstil within a few hours in order to get perfect cycloplegia since I put one drop in every five minutes for an hour and then wait thirty minutes.

With reference to the retinoscope, at the meeting of the American Academy of Ophthalmology and Oto-Laryngology at Boston two weeks ago, Dr. Newcomb, of Indianapolis, reported something like a thousand cases which he had carefully studied and recorded. He had used homatropin in these cases and preferred it to the others. One reason was that it put the eye out of commission for a shorter time, and he almost always got satisfactory cycloplegia. I was impressed very much with his statement of his method in which he prescribes from retinoscopic tests alone. He has gotten to using a very small mirror which is not more than half an inch in diameter. He had a special mirror made, and it was several weeks before he could use it successfully. He uses a very dark room, and he measures the distance at that time one meter from the eye. After the paper was discussed by Dr. Reber, of Philadelphia, and Dr. Charles L. Miner, of Ohio, and a great many others who were prominent in the meeting, I was impressed with the idea that there were very few of us who do retinoscopies accurately enough to let that be the final word. I noticed in the discussion it seemed that most of them were doing just as I do, depending as much on the test lenses to corroborate the shadow test, without taking especial pains to find an absolutely accurate measurement with the mirror. I believe if we would use our dark room and be exactly one meter from the patient and use a small mirror, that we would all do more accurate work in children and in persons whose intelligence does not enable us to get much information from the test lenses, and also from persons who do not speak the language that we do, especially in those cases we would be able to get better results and very much more easily at that.

Dr. W. H. Wilmer, Washington, D. C.: The correction of small errors of refraction is very interesting. Their correction, no doubt, does give relief, but it is a great question how much is psychological and how much is physical. Whether the relief is psychological or not, we are justified in giving the correction. I remember many years ago Dr. Chisholm, of Baltimore, corrected very small errors of refraction. His favorite prescription was a concave cylinder of ¼ dioptre. His patients, like the people in story books, were happy and comfortable ever afterwards.

In regard to homatropin, it does not, in my experience, always paralyze the accommodation. I see cases now upon whom it was used nearly twenty-five years ago. In these cases a 2 per cent solution was used every fifteen minutes for two hours. Many of these patients now show a hyperopia of 1½ dioptres more than was shown under homatropia. However, the refraction found under the homatropia was a very practical test, as the correction given at that time afforded the desired relief. The business man cannot give up a week for the use of atropin. Old people run a risk in having it used.

Any one who prescribes glasses from the skiascopic test alone—especially without using a small diaphragm—is likely to be in error. Even in cornea that are not conical, the curvature varies at the apex from that at the periphery. The use of the diaphragm will give a more practical correction because it approximates more nearly the size of the pupil that the patient is going to see through when the effect of the mydriatic has passed away.

Dr. E. W. Peery, Lynchburg, Va.: I want to testify to the efficacy of small corrections in cases especially of the nervous type. I think it decidedly proper to prescribe a 1-12 cylinder. I am quite sure Dr. Thorington advises it strongly. In the

London Royal Ophthalmic Hospital they do not prescribe anything under ¼ diopter.

I was interested in what Dr. Moore said about prisms. I am sure that prisms, even in small errors, do a great deal of good, but I do think that we may prescribe them too frequently. I believe that the simple correction of the refractive errors in many cases will relieve the symptoms I think, too, we get better results in prescribing prisms for exophoria than for esophoria.

I believe homatropin, if used properly, will paralyze the ciliary muscle pretty effectively. In my judgment it is a bad plan to use eserin following the use of homatropin as a regular practice.

Dr. Moore, closing: For a long time my patients would come back to me after probably eight or ten years, and I would refract their eyes and often obtain different results from what I had previously found. I was much inclined to think I had been in error one time or the other in making my examinations, until several years ago a patient came who had been wearing for years a cylinder, I think a plus 50 with an axis of 90, saying that he could not wear his glasses any longer; that there was something wrong, especially with one eye. He had a large chalazion on the upper lid, and I wished to remove it to which he objected at the time, but I found that he accepted a cylinder at an axis of 180. That is, the axis had been reversed. I prescribed accordingly and he wore this finding for two or three months. He came in one day and had the chalazion removed, after which he could not wear his glasses. Examination showed that the axis of the cylinder was again at 90. The pressure from the chalazion had evidently changed the curvature of that cornea.

I think that other factors enter into this. I believe the error of refraction does change and that we should not blame ourselves too much if we get different results at different times. I am convinced that homatropine cycloplegia is sufficiently strong. The examination must not be made too soon after the cycloplegic is instilled. I think if we wait an hour after the last drop, using a 2 per cent solution every five or ten minutes and then waiting an hour, that we get sufficient paralysis to enable us to prescribe glasses for the patient.

AUTHORS' ABSTRACTS.

Eye, Ear, Nose and Throat.

The Treatment of Pannus. By J. E. Pe[illegible], [illegible] Journal of the Oklahoma State Medical Association, March, 1915, pp. 318-319.

Pannus proves upon histological examination to be a [illegible] tissue which [illegible] itself between Bowman's membrane and the epithelium. Since it is possible for the cornea to [illegible] its normal structure and transparency after the elimination of the pannus, since [illegible] the cutting is once more directly applied to [illegible] I use Jequirity, both as a powder and an aqueous extract. If the powder is used it should be triturated with equal parts of sugar-of-milk. This should be put in the conjunctival sack, one time only. I prefer a 10 per cent aqueous extract, dropping a few drops in the eye every three hours, for twenty-four or thirty-six hours.

Report of Cases.

Case One.—S. C., age 21 years. Had sore eyes four years. Had pannus to the extent that he could scarcely see his way. I gave him eight days' treatment, using Jequirity in the usual way, and in 30 days he had fairly good vision. His pannus is all gone and he has gained 25 pounds in weight in four months.

Case Two.—C. C., age 43; trachoma 5 years; could not distinguish a white man from a negro at any distance. Jequirity used in the usual way. In 6 months took the prize in shooting turkeys with a rifle at a distance of 100 yards.

Case Three.—Mrs. H., age 71 years; had to be led everywhere she went. After the administration of Jequirity in 60 days could read a newspaper.

Some Points on Focal Infection, and Report of Five Cases. By H. H. Stark, El Paso, Texas. Bulletin of the El Paso County Medical Society, March, 1915, pp. 15-19.

The author reported five cases of focal infection.

Case No. 1. Diagnosed as iritis. Examination showed typical case. He was placed on stronger solution of atropin, and Wassermann made, but found negative. Examination of the teeth showed upper right bicuspid root present, which on removal brought a sac of pus. Bacteriological examination showed gas bacilli present. Improvement was extremely rapid and patient was discharged within 48 hours.

Case No. 2. Patient been in bed with an irregular fever atypical typhoid type, for a month. One eye badly inflamed but improved under atropin, but after stopping the use of drug again became worse. Patient showed low-grade iritis with several small posterior synechial. Wassermann negative, also diagnostic doses of tuberculin. On examination pocket of pus unknown to patient was found back of wisdom teeth. Examination showed small, rod-shaped bacilli unidentified. Improvement was extremely rapid.

Case No. 3. Boy, aged 12 years. History of mild sore throat, enlarged glands on both sides of neck. Before the time arrived for operation he developed articular rheumatism and endocarditis. Operation had to be deferred. The rapidity of the development of rheumatism and the heart involvement from so mild an attack in so short a time is of interest.

Case No. 4. . . .

Case No. 5. Patient complained of dizzy attacks. Examination of the eyes was negative, no nystagmus; neurological examination negative. Removal of several teeth which were loosened by pyorrhea gave almost immediate and permanent relief. Diagnosis, toxic irritation of auditory nerves.

The Southern Medical Journal

JOURNAL OF THE
SOUTHERN MEDICAL ASSOCIATION

Incorporating Gulf States Journal of Medicine and Surgery and Mobile Medical and Surgical Journal.

Published monthly at Nashville and Birmingham. Price, $3.00 per year; 25 cents per single number.
Address Southern Medical Journal, Suite 516 Empire Bldg., Birmingham, Ala.
Entered as Second Class Matter July 8, 1908, at the Postoffice, Nashville, Tenn.

EDITOR-IN-CHIEF.
SEALE HARRIS, M.D. ..... *Birmingham, Ala.*

MANAGING EDITOR.
H. A. MOODY, M.D. ..... *Mobile, Ala.*

ASSOCIATE EDITORS.
J. A. WITHERSPOON, M.D. ..... *Nashville, Tenn.*
W. D. HAGGARD, M.D. ..... *Nashville, Tenn.*
W. A. BRYAN, M.D. ..... *Nashville, Tenn.*
W. M. LITTERER, M.D. ..... *Nashville, Tenn.*
M. M. CULLOM, M.D. ..... *Nashville, Tenn.*
OSCAR DOWLING, M.D. ..... *Shreveport, La.*

BUSINESS DEPARTMENT.
MR. C. P. LORANZ, *Business Manager*... *Birmingham, Ala.*

OFFICERS OF THE SOUTHERN MEDICAL ASSOCIATION.

PRESIDENT.
DR. OSCAR DOWLING ..... *Shreveport, La.*

FIRST VICE-PRESIDENT.
DR. R. C. DORR ..... *Batesville, Ark.*

SECOND VICE-PRESIDENT.
DR. MCGUIRE NEWTON ..... *Richmond, Va.*

SECRETARY-TREASURER.
DR. SEALE HARRIS ..... *Birmingham, Ala.*

COUNCILORS.
DR. H. H. MARTIN, *Chairman* ..... *Savannah, Ga.*
DR. W. S. LEATHERS ..... *University, Miss.*
DR. LOUIS ABRAMSON ..... *Shreveport, La.*
DR. W. S. THAYER ..... *Baltimore, Md.*
DR. JOSEPH GRAHAM ..... *Durham, N. C.*
DR. R. H. MCGINNIS ..... *Jacksonville, Fla.*
DR. ROBERT WILSON, JR. ..... *Charleston, S. C.*
DR. J. SHELTON HORSLEY ..... *Richmond, Va.*
DR. L. S. MCMURTRY ..... *Louisville, Ky.*
DR. EDWARD H. CARY ..... *Dallas, Tex.*
DR. J. N. BAKER ..... *Montgomery, Ala.*
DR. J. A. CRISLER ..... *Memphis, Tenn.*
DR. C. P. MERIWETHER ..... *Little Rock, Ark.*
DR. A. R. SHANDS ..... *Washington, D. C.*
DR. G. C. ROGERS ..... *Elkins, W. Va.*
DR. MILLINGTON SMITH ..... *Oklahoma, Okla.*

SECTION ON MEDICINE.
DR. WILLIAM H. DEADERICK, *Chairman, Hot Springs, Ark.*
DR. CHARLES L. MINOR, *Vice-Chairman*.. *Asheville, N. C.*
DR. STEWART R. ROBERTS, *Secretary*..... *Atlanta, Ga.*

SECTION ON SURGERY.
DR. ISIDOR COHN, *Chairman* ..... *New Orleans, La.*
DR. JOHN H. BLACKBURN, *Vice-Ch'n*..*Bowling Green, Ky.*
DR. F. WEBB GRIFFITH, *Secretary*..... *Asheville, N. C.*

SECTION ON PUBLIC HEALTH.
DR. A. W. FREEMAN, *Chairman* ..... *Richmond, Va.*
DR. JAS. A. HAYNE, *Vice-Chairman*..... *Columbia, S. C.*
DR. W. S. LANGLEY, *Secretary* ..... *University, Miss.*

SECTION ON OPHTHALMOLOGY, RHINOLOGY, OTOLOGY AND LARYNGOLOGY.
DR. JOSEPH B. GREENE, *Chairman*..... *Asheville, N. C.*
DR. E. H. CARY, *Vice-Chairman*..... *Dallas, Texas.*
DR. THOMAS W. MOORE, *Sec'y*.... *Huntington, West Va.*

SOUTHERN STATES ASSOCIATION OF RAILWAY SURGEONS.
DR. THOMAS H. HANCOCK, *President*..... *Atlanta, Ga.*
DR. SOUTHGATE LEIGH, *Vice-President*..... *Norfolk, Va.*
DR. CLARENCE H. VAUGHT, *Secretary*.... *Richmond, Ky.*

Next Meeting, Dallas, Texas, Nov. 8, 9, 10, 11, 1915

EDITORIAL DEPARTMENT

ANNOUNCEMENT OF OUR REMOVAL FROM MOBILE TO BIRMINGHAM.

On July 1 the editorial and business offices of the SOUTHERN MEDICAL JOURNAL and the headquarters of the Southern Medical Association were removed from Mobile to Birmingham. It is with profound regret that I announce my removal from Mobile, which has become to me "a spot of all the earth supremely blessed," and whose good people have treated me with greater kindness and more consideration than I have deserved. I believe that Birmingham offers a larger field and a greater opportunity for me in my private work; and, since it is very nearly the geographical center of the South and has unusual railroad facilities, which added to the fact that it is already a large center of population and industry, Birmingham seems to be a most favorable location for the publication of the SOUTHERN MEDICAL JOURNAL and for the headquarters of the Southern Medical Association.

From this date all communications both to the JOURNAL and to the Association should be addressed to Suite 516 Empire Building, Birmingham, Alabama. Nearly all mail and all business pertaining to the SOUTHERN MEDICAL JOURNAL and Southern Medical Association can be attended to by Mr. Loranz, Business Manager of the SOUTHERN MEDICAL JOURNAL and Assistant-Treasurer of the Southern Medical Association; and Miss Purifoy, Assistant Secretary of the Southern Medical Association. All JOURNAL and Association mail requiring my personal attention and personal letters will be forwarded to me at Hot Springs, North Carolina, until August, and to New York until October, when I shall open offices in Birmingham.

SEALE HARRIS,
Editor-in-Chief, Southern Medical Journal, Secretary-Treasurer, Southern Medical Association.

THE CANCER PROBLEM.

Among all the problems facing the medical profession none is less understood, more mysterious or more deadly than that of cancer.

In spite of long-continued, world-wide, intelligent study scientifically conducted, neither its origin nor its nature are yet known.

All we really know about it can be expressed in the following sentences: It generally appears at some point where the tissues are persistently irritated. Its first stage is not painful. It tends to attack the female breast and generative organs. It often attacks the mouth and tongue, invited by the persistent irritation of faulty teeth and tobacco. It is a disease of adult life, its frequency increasing with age. It attacks more women than men. Its ravages are steadily increasing, now reaching 75,000 deaths annually in the United States.

It is not hereditary in any respect. It is incurable by any form of medical treatment. Early recognition and prompt excision afford an almost certain cure. Procrastination insures a painful death.

In the face of these facts the following incident throws a ghastly light over prevailing conditions among the laity, and suggests the only line of effort that offers any hope of staying the grim march of the disease. A certain woman wrote to the "Inquiry Column" of a city newspaper that the lump on her breast, of which she had previously written, had now been growing about a year, but that she seldom suffered from it. She had been told to rub it with kerosene, but that that hurt her and inflamed it. She was "very much worried." The reply published said: "You probably used kerosene when you had irritated the skin by intense rubbing. Bathe the spot thoroughly and apply a pad of 'antiphlogistian.'" Such ignorance on the part of the unfortunate patient and such criminal assumption of knowledge by the newspaper writer plainly point the way to the remedy for such miserable sociological conditions.

A campaign of education is the answer. It is one of our greatest sociological needs. If a knowledge of the elements of the cancer problem were as widely promulgated as is that of tuberculosis many of that 75,000 lives annually lost by cancer in the United States would be saved and the salvage would increase year after year. To meet this great want certain men of means and ability were appointed by the American Gynecological Society in 1912 to organize and start the necessary movement. These delegates met at the Harvard Club in New York City, May 22, 1913, and adopted a constitution and by-laws. They elected officers, trustees and an executive committee, and assumed the name of the American Society for the Control of Cancer. Since that date they have been actively engaged in distributing literature urging the necessity of attention to this problem and the use of every possible means for arousing a general interest in the matter. Educational circulars and bulletins are composed, printed and distributed.

Public meetings have been organized in Chicago, Pittsburg, New York, St. Louis, Baltimore and other places for the discussion of the cancer problem, and many more are in prospect. The cooperation of newspapers and of various medical organizations has been secured. The effort is being made to secure the active cooperation of women's clubs all over the country with the especial view of enlightening their sisters as to their particular peril and the means of escape. It is one of the most praiseworthy of the many movements now striving to secure public attention and the JOURNAL is glad to lend a helping hand.

Any desired information, pamphlets or literature can be obtained by addressing Mr. Frederick L. Hoffman, who is a member of the Executive Board, at the office of the society, 289 Fourth Avenue, New York City.

PLAGUE—A BLESSING IN DISGUISE.

Long after the plague of 1914 has been forgotten New Orleans, Mobile and other

gulf coast cities will build rat-proof structures with only a partial understanding of their value. Architects designing structures for those cities will make them rat-proof as a matter of course and without a thought of plague. The great fire of London was a blessing in disguise, for it changed a city of hovels to one of mansions and palaces. In 1788 there was a disastrous conflagration in New Orleans and most of the city was destroyed. An investigation showed that the shingle roofs were the chief agencies in spreading the fire and since that time no one has thought of covering a house in New Orleans with shingles. Looked at through the perspective of years the calamities of those days are seen to be blessings in disguise, and the misfortune of 1914 is also without doubt to prove a blessing in its results. It will not only render the city rat-proof and plague-proof but the whole range of vital statistics will demonstrate that that style of building improves the health of the city in a marked degree. It also renders the buildings much less susceptible to damage by fire and the reduced rates of insurance on that account will, before many years, save to the citizens much more than the cost of the improvements.

Lands and property of all kinds will rise in value because the danger of pestilence has been forever removed.

DR. DOTY ON MOSQUITO EXTERMINATION.

In the *A. M. A. Journal* for May 29, 1915, is an article by Dr. Alvah H. Doty, formerly Health Officer of the City of New York, entitled "The Extermination of the Mosquito." It is a plain, straightforward presentation of the facts in a manner intelligible to the untrained mind as well as to that of the medical man, and convincing to both. He reiterates in impressive words the positions that have been repeatedly published in medical journals, literary magazines and newspapers, namely, that only by destroying their breeding places can you exterminate the mosquito. Mosquitoes breed by the square mile, while birds, bats and little fishes multiply only by the thousand. A winged enemy of the anopheles swirling through swarms of mosquitoes leaves thousands while he devours tens, and any one of those thousands of female anopheles is enough to infect a family with malaria and abundantly perpetuate the species. Even in the wilds of unexplored forests, everywhere save perhaps in frozen regions, the anopheles meets the explorer with a poisoned welcome and does not have to wait to become infected; the forest fauna or the natives have provided for that. All the swallows and bats in a city could not destroy the progeny swarming from some hidden pool no larger than a dining table.

Only where people surrender a part of their personal rights for the general good and tolerate the frequent domiciliary visits of the sanitary inspector, cheerfully complying with his demands; only when this consideration for the general welfare prevails in every home and locality, can one hope to exterminate the anopheles, and with her, the malarial pest. Dr. Doty was for so many years in charge of health matters at the port of New York that he became a national figure. In attacking the problem of mosquito extermination as the keynote of the national sanitation needed above all others he is inspired by the same practical acumen that made him the most noted and successful guardian of the health of our greatest seaport for a generation.

The problem is simple enough in theory. Practically the innumerable points to be covered render it very doubtful of accomplishment. In certain localities it may be easily within reach. In others it would require the strong arm of the national government to accomplish it. But wherever it is possible it should be done as a matter of improved health and enlarged prosperity. It is a timely word that Dr. Doty has spoken and it should lead to renewed activity, especially by Southern physicians.

THE MODERN ARMY SURGEON.

Accounts of their work as told by surgeons who have seen service along the greatest battle line in history show that the service rendered by modern army surgeons at the front differs materially from anything heretofore experienced by our profession. True, there are field hospitals far in the rear, to which ambulances convey wounded soldiers, but the most merciful work is done by hundreds of army surgeons right along the battle line. With antiseptic gauze and bandages in one pocket, with a little chloroform and a little tincture of iodine in another, with a pocket case of indispensable instruments, ligatures and needles, and above all with a hypodermic syringe and an abundance of narcotic, anodyne and stimulating tablets, the doctors crawl along on hands and knees from one wounded man to another and lying by his side administers first aid and much needed relief.

In this way many lives are saved that would otherwise be lost, much suffering is alleviated and the dreaded gangrene is prevented from infecting the wound.

No soldier of the line, no officer in command or leading his troops, is more truly heroic than these devoted doctors who are thus risking, and often losing, their lives in the service of humanity, without expectation of honor or reward beyond the consciousness of duty well done.

ALCOHOL NOT AN ANTIDOTE FOR PHENOL POISONING.

Few recent propositions in materia medica and therapeutics have received more universal credence than that diluted alcohol is a complete chemical antidote for carbolic acid poisoning. The skin can be washed in the pure acid and if immediately bathed in 50 per cent alcohol will escape injury.

A tablespoonful has been taken into the mouth, spat out instantly and diluted alcohol taken in its place, and there was no burn. What better proof of its antidotal properties could be required of alcohol? But in view of the fact that cases of phenol poisoning do die in spite of lavage with whiskey or alcohol, certain investigators began to realize that there was a great difference between the results of the treatment of external and internal phenol poisonings; so a series of experiments was inagurated. Small animals were given pheno' in increasing doses until the lethal amount was determined. Then fatal doses of phenol were administered to such animals, and their stomachs were washed out with pure water, diluted alcohol, or saturated solution of sulphate of soda, more commonly known as Glauber's salts. These remedies were administered at certain intervals varying from five minutes to thirty minutes after giving the phenol, only one antidote being tried in each case. It was found that when the lavage was instituted within five minutes most of the animals recovered regardless of which was used. The deaths, however, were more numerous after the alcohol treatment. When the poison had been allowed to remain in the stomach undisturbed for from 5 to 15 minutes most of the animals died, the only recoveries being under the sulphate of potash treatment. In every series those treated with the alcohol were first to die. In fact, lavage with saturated solution of Gauber's salts was the only treatment that seemed to help. Alcohol was worse than nothing. Now carbolic acid has become the favorite poison for suicides. It is prompt and painless, often causing immediate unconsciousness, and death in thirty minutes. Clinical histories of alcohol addicts taking phenol to commit suicide, and being rescued by lavage with diluted alcohol or pure whiskey are not uncommon. To reconcile this apparent contradiction it has been suggested that in such cases the cells have acquired such an affinity for alcohol that they absorb it to the exclusion of phenol. This seems a weak explanation but is the only one offered so far. It would seem necessary that text-books on therapeutics should amend their statements that diluted alcohol is the best antidote for carbolic acid

poisoning. Saturated solution of sulphate of soda (Glauber's salts) is the only reliable antidote. Next to that, pure water is best. Alcohol used instantly on external phenol burns will relieve them, but internally it is very different except in the case of a drunken person.

As the JOURNAL has previously stated, it believes the law should make it more difficult for the laity to obtain so potent a poison as phenol, even for domestic sanitation. There are many better and safer germicides, and it is only in slight degree a deodorizer.

PRACTICAL EUGENICS.

The JOURNAL has received a brochure with the above title, by Dr. Thos. V. Williamson, of Norfolk, Virginia, prepared for the Social Bureau of that city. Though the subject has been frequently discussed by the press, lay and medical, yet the paper claims attention by its brevity and conciseness. It recites the claim that 60 per cent of all men have been infected with venereal disease and that a similar per cent of all gynecological operations for inflammatory conditions are necessitated by venereal infection, often contracted from husbands. It estimates that the requirement of a certificate from a state board that the applicant for a marriage license had passed a thorough physical and laboratory examination and had been found free from venereal taint "would prevent approximately 90 per cent of venereal carriers from entering the bonds of matrimony." But it considers that before this ideal condition can be established it will be necessary to educate the people so that young women will know the risk they are taking and will refuse to blindly hazard destruction. Their safety must be assured by a Wassermann, a Luetin and a whole cycle of scientific tests, all paid for by the state. Such, though not the quoted language of Dr. Williamson, are the vital points in his brief. It would seem that he depends upon the instinct of self-preservation to lead the *women* to make the eugenic demands.

The education that will save the race is the teaching of our *boys* the true inwardness, the unspeakably disgusting character of what seems a temptation only because robed in silk and masked in mystery. At the proper age teach them to take care of themselves for their own sake. Take them to the hospitals and the dispensaries and let them see the results of what some of their vile companions miscall pleasure. A few such lessons will save them.

THE NEW ADVERTISING POLICY OF THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL.

This JOURNAL is glad to read in the *New Orleans Medical and Surgical Journal* for April, 1915, that "at the instigation of the Orleans Parish Medical Society it will, in the future, refuse to accept for its advertising department all preparations condemned by the Council on Pharmacy of the American Medical Association, and "will eliminate all such as we now carry as soon as existing contracts will permit or the advertisers will consent to a cancellation." We felicitate this staunch, reliable old publication upon taking this important step.

Well-established publications like the *New Orleans Journal* can count upon ultimate success by adopting such a policy, while weak publications as are found in every state cannot survive without the money so willingly paid by advertisers of unethical preparations, and hence are more a hindrance than a help to legitimate medicine.

The *New Orleans Journal* is to be congratulated upon eliminating from its advertising pages the proprietary remedies that are objectionable to the great majority of the thinking members of the medical profession.

SURGERY OF THE BLOOD-VESSELS.

Among the book reviews in this number of the JOURNAL will be found one with the above title. Those of our readers who are espe-

cially interested in surgery will do themselves an injustice if they fail to examine this monograph. The work along this line that has been developed by Matas, Crile, Halsted, Murphy, Guthrie and Carrel, and others constitutes one of the brightest pages in the history of American surgery, and the author of this book, Dr. J. Shelton Horsley, is fully entitled to a position in that notable group of advanced thinkers and workers. Furthermore, the fact that he is a Southern man, and the field of his work is in Richmond, a Southern city, and that he is an officer in the Southern Medical Association makes it all the more pleasant for the JOURNAL to do him honor.

In this work simplicity of statement marks its sentences with true scholarship and the book has every quality of a true classic. It is worthy of the support of everyone who is interested in this delicate and refined branch of surgery. The JOURNAL considers its publication a matter of sufficient importance to justify editorial mention, contrary to its usual rule.

ANCYLOSTOMA—A CORRECTION.

We take pleasure in giving publicity to the following letter making plain a confused point in our editorial entitled "Ancylostoma," June issue:

Wasington, D. C., June 5, 1915.

Editor Southern Medical Journal:

Referring to the last paragraph in your editorial, page 544, the name Necator americanus still remains the official designation of the American hookworm, while the name Ancylostoma duodenale remains the name of the old world hookworm. Your editorial is slightly confused on this point.

Respectfully,

C. W. STILES.

Professor of Zoology.

BOOK REVIEWS

Surgery of the Blood Vessels.

By J. Shelton Horsley, M.D., F.A.C.S. Surgeon in Charge of St. Elizabeth's Hospital, Richmond, Va.; A Founder and Fellow of the American College of Surgeons; Ex-President of the Richmond Academy of Medicine and Surgery; Member of the Southern Surgical and Gynecological Association, etc. Illustrated. St. Louis, C. V. Mosby Company, 1915.

This is a notable addition to the scanty literature on blood vessel surgery. It is only eighteen years since Murphy did the first successful end-to-end suturing of a divided artery. Since that time the subject has received the careful attention it deserves, and articles of the highest importance have been published from time to time.

The book under consideration deals with "the various phases of blood vessel surgery, and particularly with its recent developments." It is a book of 296 pages and a copious index. It is profusely illustrated, every operation being shown in detail. The chapters on Hemorrhage, Pathologic Hemorrhage, Thrombosis and Embolism are especially illuminating, and the forty-three pages devoted to Aneurisms seem to convey the latest views on that important subject. It sounds hackneyed to say that no surgeon can afford to be without this work, but so it seems to this reviewer.

The Cancer Problem.

By William Seaman Bainbridge, A.M., Sc.D., M.D. Professor of Surgery, New York Polyclinic Medical School and Hospital; Surgeon, and Secretary of Committee of Scientific Research, New York Skin and Cancer Hospital, etc. New York, The Macmillan Company. Price, $4 net.

This is a book of 534 pages, including the index. The illustrations are very good and printed upon properly glazed paper. They seem to this reviewer entirely adequate in their representations of the tissues constituting various forms of cancer. One thing can be safely said of the work, and that is that it presents the subject from every possible point of view, historical, anatomical, pathological and psychological. Much space is allotted to the history of the many quack cures for cancer that have from time to time been foisted upon the public, and even have deceived many physicians.

The book is evidently intended to be read by the laity as well as by physicians, and it would be well if it could be widely known. Any person who is interested in the subject will find entertainment and information in its pages. The amount of work devoted to its preparation may be surmised from the fact that it contains fifty-three pages of bibliography.

A Text-Book of Pathology, with an Introductory Section on Post-Mortem Examinations and the Methods of Preserving and Examining Diseased Tissues.

By Francis Delafield, M.D., and T. Mitchell Prudden, M.D. Revised with the co-operation of Francis Carter Wood, M.D. Tenth edition. Completely revised. 8vo. 1,144 pages, illustrated by 14 full page plates in black and colors, and by 694 line and halftone cuts in black and numer-

ous colors. Wm. Wood & Co., New York. Extra muslin, $6.00, net; leather, $7.00, net.

When a text-book on pathology has so far succeeded in making itself a "standard" as to justify the publication of a tenth edition, the opinion of a reviewer for or against it counts for but little. His duty consists merely of jotting down a few notes as to its contents for the benefit of those unacquainted with it.

Delafield & Prudden's Pathology is a well-made, finely illustrated text-book which is accepted and used by many of the leading medical schools in the country. Its aim is first to teach students and doctors how to make autopsies, and to select, preserve and prepare tissues for microscopic examination.

It describes the lesions due to "acute, infectious diseases and the micro-organisms inciting them."

In this edition the section on General Pathology has been rewritten and expanded to keep pace with the rapidly increasing knowledge of the subject. The author is inclined to look upon disease as part of a universal adaptive process. Some paragraphs on clinical diagnosis and practical bacteriology which have proven so attractive and useful in former editions have been omitted to make room for later developments, a measure of doubtful wisdom. The section on Malaria has been entirely rewritten and merits commendation, though if it had given some ideas of the work of Bass and his fellow workers it would have been better. Some sixty pages are devoted to pathology of the respiratory organs, covering the ground from rhinitis to empyema. About 30 pages treat of the digestive systems, some of the illustrations being very fine. In the nervous system both the ideas and the illustrations have an outworn appearance. The latter bear a strong likeness to those in Kirk's Physiology, and almost as though from the same blocks.

An especially useful feature is the copious and accurate index in the back of the book. It adds immensely to its value.

Child Training as an Exact Science.

By George W. Jacoby, M.D. With full bibliography and thorough index. 384 pages, 15 full-page illustrations. $1.50 net; by mail, $1.62. Funk & Wagnalls Company, Publishers, New York.

The above appears to be to a great extent something new. True, there are works on mental insufficiency written in various languages, but this book by the well known Dr. George W. Jacoby studies the matter from a new standpoint, namely, the prophylaxis of the parents as well as the prophylactic and corrective training of the child. The training of parents regarding the welfare of offspring expected or arrived is given brief but thoughtful attention.

The most effective part of the book deals with the management of children who are seriously defective, in such a way as to develop to the utmost every function of mind and body possible, so as to build them into happy, useful citizens. Those who are interested in this important subject will not be disappointed in this effort of Dr. Jacoby.

The Commoner Diseases, Their Causes and Effects.

By Dr. Leonhard Jores. Translated from the German by William H. Woglom, M.D., Assistant Professor in Columbia University, etc., New York City. With 259 figures in the text. Price, $4.00. Philadelphia and London: J. B. Lippincott Co. Copyright, 1915.

The plan of this book is unusual in that it aims first to describe in minutest detail the anatomical conditions under pathological influence and then to give an account of the resultant symptoms or diseases and their sequelae, instead of first describing the disease and then seeking for the anatomical or pathological lesion causing the symptomatology. The relation of anatomical alteration to physiological derangement is constantly stressed. The text, it is claimed, adheres closely to the original in the main, though in some cases it has seemed advisable to supplement his account. It is in its illustratons that the book excels many of ts contemporaries. Whether plain black and white or in colors, they are superb. They are first-class examples of an art in which Germany has always excelled, the illustration of medical books. Profusely distributed throughout the book they are no less eloquent in conveying their intended lessons than is the text itself. The book is one of the highest character in every respect.

SOUTHERN MEDICAL NEWS

ALABAMA.

At Montgomery an official clean-up campaign was closed May 15 and the attaches of the sanitary and health department announced that the city is in a better sanitary condition than it has ever before been at this period of the year. The garbage can contest continued through the month of May.

Within one hour recently eight persons appeared at the Pasteur Institute in Montgomery with chil dren who had been bitten by mad dogs.

Dr. W. H. Sanders, State Health Officer, has requested the Surgeon-General of the United States to have a malarial survey made in Mobile and the adjoining territory. Dr. R. H. Von Ezdorf is conducting the survey.

In Walker County, on May 18, a health campaign under the direction of Dr. L. I. Lumsden, of the United States Public Health Service, was inaugurated. It is claimed that the entire county will be surveyed for disease prevention by disposing of flies, rats, sewage and all other conditions requiring attention. It is said that four counties in the United States have been selected for these experimental surveys. The others are Wilson County, Kansas; Anne Arundel County,

Maryland, and Orange County, North Carolina.

Ex-Gov. R. M. Cunningham, City Health Officer of Birmingham, presided at the fourth annual convention of the Southern Sociological Congress, which met in Houston, Texas, in May.

At Florence, Dr. P. I. Price has been appointed by Governor Henderson as physician of the state convict camp at the Theoli-Phillips Stove Company.

The School of Medicine of the University of Alabama held its commencement exercises at the Lyric Theater in Mobile, Wednesday, June 9. Sixteen young men, the entire senior class, received diplomas.

Deaths.

Dr. Samuel M. Hogan died at his home in Montgomery, May 7, aged 77 years.

Dr. J. W. Culpepper, aged 39 years, a physician of Cullman, died in a Birmingham infirmary as the result of an automobile accident.

ARKANSAS.

The penitentiary commission is adopting measures to protect the health of convicts. Recently Dr. A. Coulter, penitentiary physician, immunized more than 1,200 convicts against meningitis. Fifteen per cent of convicts on the state farm were found to be infected with malaria.

At Texarkana the City Council has appointed Dr. A. G. Lee food inspector for the East Side, in place of Dr. J. L. Hearn, resigned.

At Little Rock, May 6, the Arkansas Medical Society elected Dr. J. C. Wallis, of Arkadelphia, President; Dr. C. P. Merriwether, of Little Rock, was re-elected Secretary, and Dr. W. R. Bathurst, of Little Rock, was re-elected Treasurer and editor of the Journal of the Arkansas Medical Society.

Texarkana was chosen as the place for the meeting in 1916.

Deaths.

On May 2, Dr. E. L. Jacobs, aged 82 years, died at the home of his daughter in Harrisburg.

On February 25, Dr. Daniel N. Fisher, aged 69 years, died at his home in Benton.

DISTRICT OF COLUMBIA.

At Washington, May 13, the Association of American Physicians closed its thirtieth annual convention with a banquet at the Raleigh Hotel. Officers elected for the ensuing year are: President, Henry Sewall; Vice-President, George Dock; Secretary, George M. Kober; Recorder, Thomas McRae; Treasurer, J. P. Crozier Griffith; Councilor, Herbert C. Moffett.

At Washington, May 12, Dr. L. Cabell Williamson presented his resignation to the commissioners as a member of the Board of Medical Supervisors of the district. His resignation follows closely those of Dr. George C. Ober and Dr. J. B. [illegible]

Deaths.

On May 11, Brigadier-General William Henry [illegible], aged [illegible] years, died at his home in Washington.

In Washington, May 16, Dr. George Nelson Perry died at his home from heart disease, aged 61 years.

In Washington, May 10, Dr. James J. Purman died at his residence, 313 East Capitol Street, aged 75 years.

In Washington, May 11, Dr. Reuben Henry Andrews, for several years assistant paymaster in the Treasury Department, died at the Emergency Hospital from acute uremia, aged 72 years.

At Washington, May 16, Dr. William T. Dollison died at his home, 21 Kirke Street, aged 75 years. He leaves a widow and four children.

At Washington, May 16, Dr. William T. S. Duvall, for twenty-five years in the employ of the government, died at Garfield Hospital, aged 80 years.

FLORIDA.

The Senate Bill No. 135 makes it a misdemeanor to operate a hotel or any other eating or cooking place without having all the openings screened against flies and fixes a heavy penalty for noncompliance. It also requires all school buildings "to be provided with adequate facilities for nature's conveniences by water carriage or surface closets, requiring all surface closets in rural districts to be of fly-proof construction and in conformity with plans recommended or approved by the State Board of Health; requiring separate compartments in same and prescribing a penalty for failure to comply with the provisions thereof."

On May 18 more than 100 physicians met to attend the American Gynecological Society and the Ameircan Association of Genito-Urinary Surgeons.

At Tampa, May 19, a man named John N. King was arrested by United States Deputy Marshal L. A. Reynolds charged with using the United States mail for fraudulent purposes. He is charged with sending advertising matter by mail claiming to cure diseases by the power of the mind. He was caught by means of a decoy letter replying to his advertisements.

At Deland, May 11 to 14, the forty-second annual convention of the Florida Medical Association was in session. Large numbers of prominent physicians attended from all over the country. Officers for the ensuing year were elected as follows: President, Dr. R. H. McGinnis, of Jacksonville; First Vice-President, Dr. W. R. Stevens, of Deland; Second Vice-President, Dr. Mary Freeman, of Perrine; Third Vice-President, Dr. Coffee, of Port Mead. Arcadia was chosen as the next meeting place.

Dr. H. L. Pierce, for several years a practitioner in Pensacola, has moved with his family to Tampa.

GEORGIA.

On May 10, the Anti-Tuberculosis and Visiting Nurse Association moved into larger quarters at 23 East Cain Street.

Dr. J. C. White, Councilman from the Seventh Ward was appointed surgeon of the North Georgia Brigade, Confederate Veterans, by General [illegible] Commander.

On May 18, officers of the state boards of health of a number of Southern states, who are members of the International Health Commission, a department of the Rockefeller Foundation, met in annual convention at the Hotel Ansley. The principal subject of the day was the hookworm problem.

(Continued on page xxiv.)

AT THE TOP

In medical literature, it is claimed that, in the treatment of ANOREXIA, or loss of appetite in nursing infants, sweetened condensed milk is "at the top" of infant foods—equal, and in the opinion of authorities — superior to medicine's best. It stimulates where other stimulants fail. Apply this medical discovery by using—

Gail Borden
EAGLE
BRAND
CONDENSED
MILK
THE ORIGINAL

It is essentially the restorer of the subnormal appetite. Nursing babies in the last phases of ANOREXIA retain it when they cannot take the breast or ordinary milk.

Write today for Samples, Analysis, Feeding Charts in any language, also our 50-page book, "Baby's Welfare."

Borden's Condensed Milk Company "Leaders of Quality" Established 1857 New York City

Look for the RED HEART on the bottle label---no RED HEART, its not Stafford.

STAFFORD WATER

The BO-GA-HA-MA (Water of Life) of the Indians.

DIURETIC
DILUENT
APERIENT
HEMATIC

Dr. Henry Froehling, of Froehling and Robertson, Chemists, Richmond, Virginia, on October 30th, 1914 collected in person water from Stafford Springs from which to make an exhaustive test. A complete report has just been made on the water---a report that justifies all the claims made of Stafford Water by its many friends.

Dr. Froehling in his report comments as follows:

"It has been shown that Radio Emmanations are very effective in Gout, Rheumatism, Sclerosis of the Arteries, and that the use of Radio Active waters either by drinking or bathing, have a strong tendency to increase the activity of the kidneys and bladder. This has perhaps been no uncertain factor in producing the many cures of Nephritis and other kidney troubles credited to the Stafford Mineral Water.

Stafford shipped in any quantity---handled by all druggists.
We have excellent hotel accommodations at reasonable rates.

Stafford Mineral Springs and Hotel Co., Ltd.

Operated by COLBURN MORGAN COMPANY,
VOSSBURG, MISS.

Look for the RED HEART for genuine Stafford Water. *Write for booklet and analysis.*

(Continued from page 648.)

The Atlanta Anti-Tuberculosis Association has issued 25,000 little books to the school children as a matter of education.

Dr. Emory R. Parks, of the State Board of Health, announces that vaccination against typhoid will be furnished free to all applicants in Atlanta who will bring a prescription from a physician.

The Atlanta Medical College has transferred and assigned all of its assets to Emory University, so as to make the college its medical department.

The Central of Georgia Surgeons' Association has elected the following officers: President, Dr. T. M. Hall, of Milledgeville, Ga.; Vice-President, Dr. W. H. Hutchinson, of Childersburg, Ala., and Dr. W. E. Saunders, of Arlington, was retained as Secretary and Treasurer. Macon, Ga., was selected as the next place of meeting.

The dairymen of Macon keep their milk in the wagons at the temperature required by the health authorities and the inspectors report that the supply is absolutely satisfactory.

The citizens of Macon are warned by City Bacteriologist T. F. Sellars to abstain from drinking well water unless it has been examined by experts and found pure. He thinks the city water is safe, but advises consumers to boil all their drinking water regardless of the source, as a precaution against infection.

Microscopic examinations of 322 people in Bibb County during one week found 138 infected with hookworm. They were properly treated.

At Milledgeville, May 4, the trustees of the Georgia State Sanitarium made its report for 1914. The number of patients on hand at the close of the year was 3,655. New patients received during the year were 1,427. Much work is being done in the sanitarium in the study of pellagra by experts of the United States Public Health Service.

Deaths.

At Valdosta, May 20, Dr. J. S. Stanley, a prominent physician of Macon, Miss., died suddenly from heart failure. He was a Confederate veteran.

At Cordele, May 8, Dr. H. B. Roberts died at his residence from Bright's disease, aged 63 years.

At Augutsa, May 5, Dr. George A. Wilcox died at his home on Greene Street, aged 66 years.

At Bluffton, May 10, Dr. P. H. Thompson died at a private sanitarium. He was interred at Edison.

At Hoschton May 22, Dr. Ernest DeLaperreiere died at his home, aged 30 years. He was unmarried.

KENTUCKY.

At Louisville, May 6th, the Kentucky State Homeopathic Medical Society elected the following officers: Dr. E. B. Smith, of Shelbyville, President; Vice-President, Dr. C. J. Pollard, of Princeton; Secretary, Dr. A. H. Seibert, of Louisville; Treasurer, Dr. Paul Kerkow, of Covington.

The city health officer is taking active steps to protect the citizens against hydrophobia. When ever a person is bitten the owner of the animal will be required to keep the dog confined and properly fed until ten days have elapsed. The city veterinarian will visit the case and watch for symptoms of hydrophobia in the animal.

Dr. Samuel B. Grubbs, surgeon in command of the United States Marine Hospital at Louisville for the past year, has been assigned to duty elsewhere. Dr. J. F. Crane has been temporarily placed in command.

At Lexington late in May two negroes were found suffering with smallpox, and were taken to the Eruptive Hospital.

At Bowling Green, May 19th, it was reported that there were fifteen persons taking the Pasteur treatment at the State Board of Health

At Carlisle, May 12th, it was reported that scarlet fever was prevalent to a considerable extent.

The Fulton County Medical Association elected the following officers: President, Dr. John Naylor, of Cayce; Vice-President, Dr. J. B. Paschall, of Fulton; Secretary-Treasurer, Dr. Seldon Cohn, of Fulton.

At Paducah all permits to dairymen expired in May. To secure a renewal they were required to present to Dr. H. P. Linn, City Health Officer, a certificate from the meat, milk and live stock inspector showing that the dairy herd had passed the sanitary inspection and the tuberculin test according to the city ordinance.

At Henderson, May 22nd, Dr. D. W. Metcalf was indicted on the charge of practicing medicine without a state license.

At Frankfort, May 8, the health exhibit car of the State Tuberculosis Commission started on its summer tour and about 300 people visited it the first day. Afterwards it visited Millville and from there went to Versailles, where it remained for the rest of the week.

In May an epidemic of scarlet fever prevailed in Nicholis County and one of measles in Ohio County.

Deaths.

At Rothwell, April 13th, Dr. John L. Brown died at his home, aged 51 years.

At Lawrenceburg, May 11th, Dr. Ollie L. Townsend died at his home, aged 55 years.

At Millersburg, May 16th, Dr. W. B. Huffman died at his home, aged 57 years.

At Louisville, May 24th, Dr. William M. Forman died at the home of his son, age 65 years.

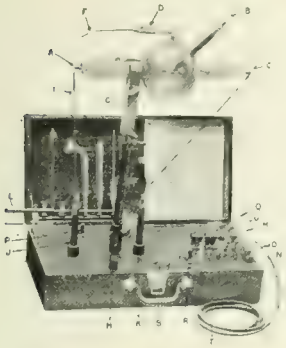
At Jacksonville, April 27th, Dr. Wm. A. Brock died at his home, aged 78 years.

LOUISIANA.

Dr. Rudolph Matas, of Tulane University, who attended the dedication of the new building of the Washington University of St. Louis, had conferred upon him, at the dedication exercises, the degree of Doctor of Laws, in recognition of his brilliant work in the field of modern surgery. Upon his return to New Orleans he was agreeably surprised at his early morning clinic at the Charity Hospital by the action of the medical class of Tulane, who presented him with a set of congratulatory resolutions on the occasion of his receiving the honorary degree.

State Health Officer Oscar Dowling, at the meeting of the Southern Sociological Congress, at Houston, Texas, addressed the congress on the

(Continued on page xxvi.)



What X-Ray Equipment Means to You

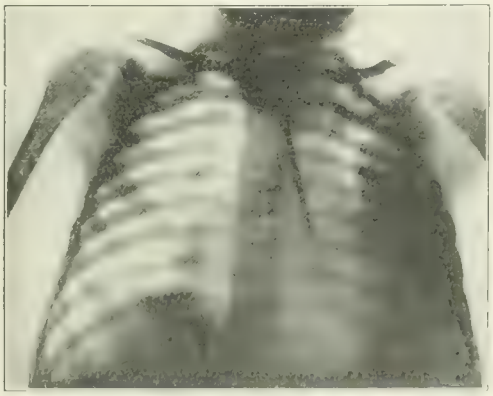
Every physician should own a Portable Coil. In these days, state after state is demanding that an X-Ray plate be shown in every personal injury case.
Why not make your own plates?
In addition—you can better your diagnosis—add prestige and dignity to your practice—and **materially increase your income.**
Several thousand physicians have used the—

Scheidel-Western Suit Case Portable Coil

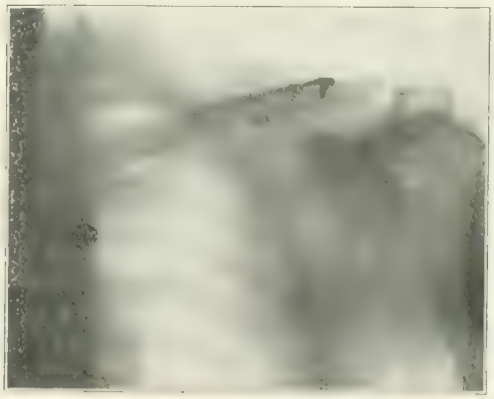
and the verdict is, "the most powerful Portable Coil made."
You will find it a valubale diagnostic agent in your office—and it can be easily carried wherever you wish to take it
There is no mystery about it. Attached to any electric light socket—and full directions accomapny each outfit, enabling you to get good results right from the start.
Fully guaranteed—and SCHEIDEL-WESTERN SERVICE makes you an expert operator.
Learn more about it—use coupon below.

STEEL IN EYE

FRACTURED ULNA



NAIL IN LUNG



FRACTURED CLAVICLE

SCHEIDEL-WESTERN X-RAY CO.
737-739 W. Van Buren St., Chicago, Ill.
Gentlemen: Please send me full information about your Portable Coil and tell me of your Money Making Plan.

SCHEIDEL-WESTERN X-RAY CO.

Largest Manufacturers of X-Ray Apparatus in the World

737-739 W. VAN BUREN ST.

CHICAGO - - ILLINOIS

(Continued from page xxiv.)

subject of "The Cost of Preventable Diseases in the South."

At Baton Rouge, April 8th, the Sixth District Medical Society was organized and elected the following officers: President, Charles W. McVea, Baton Rouge; Vice-President, J. W. Lea, Jackson; Secretary, R. P. Jones, Baton Rouge.

Deaths.

In New Orleans, March 18th, Dr. L. Tarlton died from tuberculosis, aged 28 years.

MARYLAND.

Chosen from a list of five nominees, Dr. J. L. Riley, of Snow Hill, and Dr. L. A. Griffith, of Upper Marlboro were elected members of the State Board of Medical Examiners at the meeting of the Medical and Chirurgical Faculty, in Osler Hall, Baltimore.

It is stated that the medical schools of Johns Hopkins, Harvard and Columbia Universities have made an offer to the Allies to combine in establishing a hospital with 1,000 beds in France or Belgium to care for the wounded. If the offer is accepted Drs. John M. T. Finney, W. S. Baer and William H. Welch will lead the Hopkins' delegation. A large staff will be necessary, composed chiefly of recent graduates.

Dr. Henry R. Carter, Assistant Surgeon General at Large of the U. S. Public Health Service, was compelled to undergo a slight operation in May, but promptly recovered. He is engaged in sanitation work in the malarial districts of Alabama, Georgia and other Southern States.

The Maryland State Homeopathic Medical Society on May 19th elected the following officers: President, Dr. M. B. Hood; Vice-Presidents, Dr. Marie L. Inghram and Dr. E. H. Wilsey; Recording Secretary, Dr. J. Elmer Cummings; Corresponding Secretary, Dr. W. Dulaney Thomas; Treasurer, Dr. A. J. Davies.

At Cumberland there has been a notable decrease in the number of cases of typhoid fever per thousand of the population. In 1910 the ratio reported was over 26 to the thousand. In 1913 it was given as over 20 to the thousand. In 1914 the new water supply came into use with the result of reducing the number of cases to only 2.43 to the thousand. The efficiency of the filtration plant seems to be demonstrated.

The outbreaks of smallpox at Sharpsburg and Hagarstown were completely under control by the end of May. The condition about Mondell [illegible] to be favorable.

At Emmitsburg Dr. Ralph Browning, County Health Officer, on May 19th ordered the public school closed on account of the presence of three cases of scarlet fever among the school children.

Deaths.

At Baltimore, April 25th, Dr. William Becker, a veteran of the Civil War, died at his home, aged [illegible] years.

At Baltimore, May 2nd Dr. Edward G. Altvater died at the University Hospital after an operation for appendicitis, aged 30 years.

At Baltimore, May 15th, Dr. R. D. Coale died at the University Hospital as a result of paralysis. He was a Ph.D. of Johns Hopkins and had been dean of the medical school of the University of Maryland for many years. His age was 58 years.

At Baltimore, May 18th, Dr. William R. Jones died at the home of his parents, 520 N. Arlington Avenue, aged 32 years.

In Baltimore, April 28th, Dr. A. F. Bissell died, aged 88 years.

In Baltimore, April 25th, Dr. Robert Hoffman died at his home from heart disease, aged 55 years.

MISSISSIPPI.

Dr. D. W. Jones, of Brookhaven, has been elected State Sanitary Inspector by the State Board of Health. He succeeds Dr. Willis Walley, and will assume the duties of his office at once.

Dr. Willis Walley visited Carrolton in May to try to ascertain the cause of an epidemic of typhoid fever prevailing there. After examination he attributes it chiefly to dissemination by flies. Forty cities in the state are competing for the title of the "Cleanest City."

Deaths.

At Greenville, May 6th, Dr. Hugh R. Rutledge died at his home, aged 91 years. He was a surgeon in the Mexican war and is supposed to have been the oldest practitioner in the state.

NORTH CAROLINA.

Raleigh Items: The Bureau of Vital Statistics early in May prosecuted 25 delinquents for failing to report births according to law. Twenty-three of the delinquents were physicians.

Dr. W. S. Rankin, Secretary of the State Board of Health, has been appointed by Governor Craig to make an examination of the prison camps in ten or more counties to arrive at an adequate realization of exact conditions. His work will begin in June. Nash County has already been investigated and the report filed with the governor.

Five counties in the state will co-operate in anti-typhoid campaigns. They are Wake, Northhampton, Cumberland, Henderson and Buncombe. They will administer the vaccine to all who desire it, and it is expected that more than 5,000 people in each of these counties will avail themselves of this free opportunity for protection against typhoid fever. Several points in the counties will be provided with dispensaries. Dr. M. McKee will administer the vaccine in Raleigh.

The counties of Northampton and Edgecombe have made appropriations of money with which to start a six weeks' campaign against typhoid. Wake County also has appropriated $500 for the same purpose.

At Winston-Salem Dr. J. G. Ector, residing on North Liberty St., has retired from active practice and is living on his farm at Guilford College.

At Wilmington, May 8th, a cablegram was received from Queenstown, Ireland, reporting the safe arrival on shore of Dr. Owen G. Kennan, from the Lusitania tragedy. He was the personal physician of the late Henry Flagler.

At Asheville the health department has declared itself unable with its present force of

(Continued on page xxviii.)

SHERMAN'S BACTERINS

39 DIFFERENT PREPARATIONS
Put up in 1 c. c. glass sealed ampules
Package, 6 ampules, any variety, $1.50

Dr. Sherman's New Book
Devoted to the practical application of Bacterins. Cloth bound, 336 pages.

Price $1.50

The Bacterial Therapist
A 24-page monthly journal devoted exclusively to Vaccine Therapy. Free for one year upon request.

The Latest Development in Bulk Package

Patent applied for
G. H. SHERMAN, M. D.
Write for Literature. DETROIT, MICH.
U. S. License No. 30.

50% Better
Prevention Defense Indemnity

1 All claims or suits for alleged civil malpractice, error or mistake, for which our contract holder,
2 Or his estate is sued, whether the act or omission was his own
3 Or that of any other person (not necessarily an assistant or agent)
4 All such claims arising in suits involving the collection of professional fees
5 All claims arising in autopsies, inquests and in the prescribing and handling of drugs and medicines.
6 Defense through the court of last resort and until all legal remedies are exhausted
7 Without limit as to amount expended.
8 You have a voice in the selection of local counsel.
9 If we lose, we pay to amount specified, in addition to the unlimited defense.
10 The only contract containing all the above features and which is protection per se. *A sample upon request.*

The MEDICAL PROTECTIVE CO.
***of* Fort Wayne, Indiana**
Professional Protection, Exclusively

Advising Bran

Bran, as a forced diet, need not be palatable. But you need a likable form to establish bran habits. And that's what you seek, do you not?

You want the bran food efficient, and you want the bran unground.

Pettijohn's meets all these conditions. It consists of luscious soft wheat flakes with 25 per cent bran rolled into them. It's a breakfast dainty. Everybody likes it. Users continue it. Physicians by the thousands now regard this the ideal form of bran food. So will you.

Pettijohn's

Rolled Wheat with the Bran

Package Free

We will mail to any physician a full-size package for testing at home or with patients. Please ask us for it.

Most better-class grocers sell Pettijohn's for 15 cents per package. It has national distribution, so any grocer can get it from his jobber. For free package address

The Quaker Oats Company
Chicago, Ill.

(Continued from page xxvi.)

employes to provide a system of inspection for street wagons vending ice cream so strict as to guarantee the purity of the product, and that it is the belief of the health officer of the city that the governing body of the municipality should decline to grant licenses for this class of dealing after the month of May.

Assistant Epidemiologist F. E. Harrington, U. S. P. H. Service, was detailed to attend the annual meeting of the Southeastern Sanitary Association, at Asheville, May 25-26 1915.

Deaths.

At Asheville May 18. Dr. J. M. Stevens, a veteran of the Confederate Army and the oldest practicing physician in Buncombe County, died at his home, aged 81 years.

OKLAHOMA.

At Oklahoma City the city health department requires all fruits and other edibles exposed for sale to be protected from flies and dust by glass or gauze coverings.

The seven-story Lawrence building, on West Grand Avenue, containing the quarters of the supreme court and other state officials, was placed under quarantine May 17th, when it was discovered that Jim Noble, the janitor, was suffering with a severe case of smallpox. No unvaccinated person was permitted to leave the building until he had been vaccinated.

At the Bartlesville meeting of the Oklahoma State Medical Association the following officers were elected: President, J. Hutchings White, Muskogee; Vice-President, W. Penquite, Chickasha; Second Vice-President, J. P. Suddarth, Nowata; Third Vice-President, W. A. Cook, Tulsa. Oklahoma City was selected for the next meeting.

At Chickasha, Dr. Dawson, the City Health Officer published a notice in the paper advising the public to observe conditions about the grocery stores, bakeries and meat markets and see whether flies were permitted to crawl over the food. This notice has had more effect than any ordinance could have done in preventing carelessness.

At the State Medical School in Oklahoma City Dr. LeRoy Long, of McAlester, has been appointed dean.

In Oklahoma City the sanitary corps are taking photographs of unsanitary backyards, empty house interiors and garbage cans in all parts of the city for use as evidence in the police court.

The City Health Department of Oklahoma City has charged up to the Frisco Railroad the expense attached to vaccinating all the passengers on a train which was halted in the outskirts because of a smallpox patient on board.

Deaths.

At Oklahoma City, May 14th, Dr. John Thread[illegible], retired physician, and Confederate veteran, died at his home from heart failure.

SOUTH CAROLINA.

At Waverly Mills, near Georgetown, smallpox has been prevalent for several months. In May Dr. A. H. Hardin was authorized by the State Board of Health to go to Georgetown and attempt to stamp out the disease in that part of the county.

The "Columbus State" calls attention to the practical elimination of typhoid fever, the cessation of smallpox, and a nine per cent decrease in diphtheria which Hanover County, in the adjoining state of North Carolina, has accomplished in the last few years through the work of its County Board of Health. This board receives annually from the city of Wilmington and the county, jointly, $23,205. The county health officer is also quarantine officer, has an assistant, a laboratory, clerical assistance and eight sanitary policemen.

Deaths.

At Ninety-six May 4th, Dr. Thomas S. Blake died at his home, aged 88 years.

At Due West, April 19th, Dr. John H. Bell died at his home, aged 83 years.

At Clemson College, May 16th, Dr. Paul H. E. Sloan, for twenty years president and treasurer of Clemson College, died suddenly while sitting in his chair. He served as a surgeon in the Fourth South Carolina regiment through the Civil War. His age was 79 years. He leaves a widow and four children.

At Greenwood, April 20th, Dr. S. L. Swygert died suddenly from heart disease while making an address before the House of Delegates of the South Carolina Medical Association. His age was 54 years.

TENNESSEE.

At Nashville, May 17th, Dr. Joseph Goldberger, of the U. S. Public Health Service, delivered an address in the rooms of the Nashville Business Men's Association on the subject of pellagra. "It is hard to say," he asserted, "that this disease is directly attributable to any particular diet, and yet pellagra is associated with a one-sided diet." In his opinion corn, even of the best quality, is injurious in pellagra. (Nashville Tennessean & American, May 18th, 1915.)

At Nashville, according to a report submitted to the Parents and Teachers' Association by Miss Dougherty, school nurse for the first year's work of the organization, there were over 500 children treated, though the figures cover only seven months.

Dr. W. E. Hibbett, City Health Officer of Nashville, has issued a bulletin entitled, "Typhoid Fever and Its Prevention." A copy will be placed in every residence in Nashville.

At Dyersburg, May 18th, the West Tennessee Medical and Surgical Association closed a two days' session with a banquet. Dr. Grafton, of Union City, was elected President and Dr. McSwain, of Paris, Secretary. Jackson was selected as the next place of meeting.

At Chattanooga the office of "Director of Health and Sanitation" was created, and Dr. H. Quig Fletcher was appointed to fill the position. Dr. J. B. Steele submitted his resignation as city physician, and Dr. E. B. Wise was appointed his successor.

A buggy in which Dr. E. F. McIntosh was riding was struck by an automobile at the corner of A and East Tenth Streets, May 10th. The doctor was severely but not dangerously injured.

(Continued on page xxx.)

Autogenous Vaccines $5.00

In every case the exciting organisms are isolated and made into the Specific Vaccines.

These Vaccines are put up in 20 c.c. sterile containers specially designed to prevent contamination. If desired the Vaccines will be furnished in 1 c.c. sterile ampules.

ALL SEROLOGICAL TESTS NOW $5.00

Wassermann Test controlled by Noguchi or Hecht-Weinberg Methods.

Complement Fixation Test for Gonorrhea.

Abderhalden's Sero-Diagnosis of Pregnancy, Cancer or Dementia praecox.

Lange's colloidal Gold Test for differential diagnosis of Spinal Fluid.

We are prepared to perform all types of laboratory examinations for diagnostic purposes and can assure you accuracy and efficiency from our staff of experienced workers in this field.

Fee tables for all examinations and full directions for forwarding specimens, on request. Containers and culture media furnished.

CHICAGO LABORATORY
CLINICAL ANALYTICAL
ESTABLISHED 1904 PROMPTNESS EFFICIENCY

25 E. Washington Street CHICAGO Phone 3610 Randolph.

RALPH W. WEBSTER, M.D., PH.D.,----------Director of Chemical Department.
THOMAS L. DAGG, M.D.,----------Director of Pathological Department.
C. CHURCHILL CROY, M.D.,----------Director of Bacteriological Department.

A Rational Procedure in Summer Diarrhea

For Infants of any age

Mellin's Food
4 level tablespoonfuls
Water (boiled, then cooled)
16 fluidounces

Give one to three ounces every hour or two, according to the age of the baby, continuing until stools lessen in number and improve in character.

Milk, preferably skimmed, may then be substituted for water—one ounce each day—until regular proportions of milk and water, adapted to the age of the baby, are reached.

(Continued from page xxviii.)

Commissioner Huffaker has announced the appointment of Dr. P. D. Sims as consulting physician, at $75 a month.

The physicians and the society women of Chattanooga are co-operating with the Chattanooga Department of Health in the effort to establish a free clinic or dispensary for the needy sick of the city.

At Lebanon the Middle Tennessee Medical Association elected the following officers: President, Dr. F. B. Reagor, of Shelbyville; Vice-President, Dr. R. W. Billington, Nashville; Secretary-Treasurer, Dr. Jack Witherspoon, Nashville. Sparta was selected for the next semi-annual meeting.

Dr. J. C. Alexander, graduate of the University of Tennessee Medical College, suffered two fractured ribs and other injuries in an automobile accident May 16th.

Deaths.

At Memphis, May 9th, Dr. Eugene A. Johnson, a celebrated surgeon, died at St. Joseph's Hospital from pneumonia, after an illness of three weeks. His age was 48 years.

At Nashville, May 10th, Dr. P. F. Hager, for six years prescriptionist of the city health department, died at his residence, aged 57 years.

At Knoxville, May 16th, Dr. J. S. McDonough, one of the oldest citizens of Knoxville, died at his home, aged 85 years. He was a Confederate veteran.

At Dresden, May 20th, Dr. Will Moore died suddenly at his home from apoplexy. His age was 55 years.

At Newport, May 27th, Dr. W. G. Snoddy died at his home, aged 70 years.

TEXAS.

All of the nine small incorporated towns in Dallas County are urged to appoint city health officers in compliance with the state law. The state law is mandatory upon that subject.

At Galveston the Medical Department of the University of Texas will erect two new buildings, one a nurses' home that will accommodate 55, and the other a new hospital costing $150,000.

At Galveston Dr. A. L. Lincecum, Assistant State Health Officer, has inaugurated a rat extermination campaign.

At San Antonio the Board of Health recommends that the corrals and all kindred places be immediately condemned as a menace to the public health; that the sale of foodstuffs there be absolutely prohibited, and that the shelling of pecans under the conditions therein existing for use in making cakes, candy, etc., be prohibited.

The inspectors in the employ of the City Health Department of San Antonio appear for the first time in uniform.

As Dr. H. Kuntz of Lacoste was crossing Richmond Avenue at Camden Street he was struck by an automobile and painfully injured.

The various commercial bodies of San Antonio are urging the city commissioners to employ an expert of sanitary science to clean up the city.

At the Presbyterial Convention at Houston it was stated that there were 296 insane people in the jails of Texas because there was no room in the insane hospitals to accommodate them.

Mr. Charles Saville, the newly appointed director of sanitation, assumed charge of his position May 15th. He serves under the Dallas Board of Health at a salary of $2,000.

The new Dallas Board of Health, created by Mayor Henry D. Lindsley, met in the City Park Board rooms May 7th and organized by the election of Edward Titche as vice-chairman and S. H. Boren as secretary. Committees were appointed for various phases of the work.

At Waco Dr. R. H. Hodges, city food inspector, decrees that every package of butter shall be weighed, and that not less than sixteen ounces shall be sold for a pound.

At Houston, May 10th, the City Board of Health elected Dr. S. M. Lister President; Dr. J. Allen Kyle, Vice-President, and W. M. Fonville, Secretary.

The Southern Sociological Congress, which met at Houston, May 8th-12, elected the following officers: President, Samuel Palmer Brooks, of Baylor University Waco; First Vice-President, Dr. Oscar Dowling, New Orleans; Second Vice-president, Miss Belle H. Bennett, Richmond, Ky.; Treasurer, J. H. Dillard, Nashville, Tenn.; General Secretary, J. E. McCulloch, Nashville, Tenn. A large executive committee and several other committees were appointed. The place of the next meeting of the congress has not been announced.

Deaths.

In Detroit, March 10th, Dr. John M. Berry committed suicide because of ill health. His age was 50 years.

At Olney, April 27th, Dr. A. M. Anderson died, aged 44 years.

At Itasco, May 17th, Dr. Frank Douglass died at his home after a brief illness.

At Glenrose, May 7th, Dr. T. J. Murray died at his home, aged 91 years. For many years he was County Health Officer for Somerville County. He leaves a widow and five children.

At Rockport, May 18th, Dr. J. H. Harwell died at his home, aged 67 years. He was interred in San Antonio, which was once his home.

At Garzo, seven miles southeast of Denton, on May 15th, Dr. C. W. Gotcher died at his home from heart trouble, aged 40 years.

At Galveston, May 13th, Dr. Thomas W. Nave died at his home after a short illness, aged 38 years.

VIRGINIA.

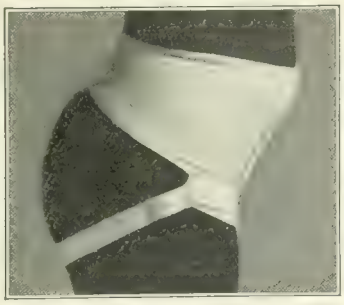
At Norfolk, May 17th, at a conference between the City Board of Health and the Board of Supervisors, the differences between them were satisfactorily adjusted, and the work of the city and of Norfolk County will proceed smoothly hereafter. The Board of Health elected sanitary inspectors for the three largest districts in the county.

Dr. Powhatan S. Schenck, local health commissioner, has officially reported to the Norfolk Board of Control that the city water is pure. Samples of the water are tested three times each week in winter and daily in summer. On May 11th, at a meeting of the stockholders and directors of the Protestant Hospital, Dr. Harvey M. Dixon

(Continued on page xxxii.)

THE STORM BINDER AND ABDOMINAL SUPPORTER

(PATENTED)



No Leather. No Whalebones. No Rubber Elastic
Washable as Underwear

Adapted to Use of Men, Women, Children and Babies

FOR HERNIA, RELAXED SACROILIAC ARTICULATIONS, FLOATING KIDNEY, LOW AND HIGH OPERATIONS, PTOSIS, PREGNANCY, PERTUSSIS, OBESITY, ETC.

Send for new folder and testimonials of physicians. General mail orders filled at Philadelphia only—within twenty-four hours.

Katherine L. Storm, M. D., 1511 Diamond St. PHILADELPHIA

GEORGE RUCKER

Constitution Bldg. Atlanta, Ga.

SCIENTIFIC MOTION PICTURES
MICROPHOTOGRAPHS
LANTERN SLIDES, X-RAY SLIDES.
CORRESPONDENCE SOLICITED

CLASSIFIED ADVERTISEMENTS

Advertisements under this heading will cost 75c for fifty words or less, payable in advance. Additional words, 1½c each. All replies received in our care will be promptly forwarded. **Southern Medical Journal, Birmingham, Ala.**

SYSTEM FOR THE DOCTOR means money and time saved, more efficiency in the treatment of the patient and less drudgery for the physician. THE HOLDEN SYSTEM is simplicity itself and a recognized economical, complete, uniform and reliable short cut method for ACCOUNTS and CASE-RECORDS. Eleven years of success proves our claims. Special reduced introductory offers made to readers of this magazine. Samples and full information sent on request. Address THE HOLDEN SYSTEM, Box 351-D, Yonkers, N. Y.

WASSERMANN LABORATORY—2159 Madison St., Chicago. Alcoholic Luetic Liver Extract and Amboceptors furnished. Wassermann Test, Autogenous Vaccines, Pathological Specimens examined. Intravenous Gravity Outfit. GUINEA PIGS FOR SALE. Free instructions how to do the Wassermann Test.

Quaker Oats

All Puny, Starved Grains Discarded

A bushel of choice oats contains, on the average, only ten pounds of rich, plump grains. And that's all we use in Quaker.

That's one reason for this matchless flavor. The other lies in heat. Hours of dry heat and steam heat fix and enhance the flavor, and help fit the grains for food.

Quaker Oats has become on this account the leading oat food of the world. Even in Britain—the home of Scotch oats—Quaker is the favorite brand.

You are wrong if you think that any oat food at any price excels it. Yet some cost thrice as much.

Examine these big, luscious flakes. Note their flavor and aroma. You will never even hope for a finer dish of oats.

10c and 25c per Package
Except in Far West and South

The Quaker Oats Company
Chicago

(Continued from page xxx.)

was re-elected president; J. W. Huogh, vice-president, and Louis Mansbach, treasurer. All of the directors were also re-elected. Full reports of the work of the past year were rendered.

At Alexander, May 20th, sixty physicians attended the annual meeting of the Medical Society of Northern Virginia and the District of Columbia. The following officers were chosen: President, S. B. Moore, Alexandria; First Vice-President, J. B. Nichols, Washington; Second Vice-President, G. R. Cottingham, Remington; Recording Secretary, Thomas A. Groover, Washington; Corresponding Secretary, Joseph D. Rogers, Washington; Treasurer, William I. Roby, Herndon.

At Lexington May 11th, Dr. W. C. Gorgas addressed the Virginia Public Health Association, assembled at Washington and Lee University. The association elected the following officers before adjourning: President, Dr. J. W. H. Pollard; First Vice-President, Dr. C. C. Hudson; Second Vice-President, Dr. T. J. Pretlow; Secretary-Treasurer, Dr. W. B. Foster.

Governor Stuart has appointed five members of a State Tuberculosis Commission, the personnel of which is as follows: W. L. Andrews, of Roanoke; I. E. Spatig, of Lawrenceville; Dr. H. T. Marshall, of the University of Virginia; Edmund Strudwick, of Richmond, and A. T. Lincoln, of Marion. The members of this commission serve without pay.

At Old Point Comfort, May 13th, Dr. Edward N. Brush, of Towson, Md., was elected president of the American Medico-Psychological Association.

At Richmond, June 1st, the Medical College of Virginia granted diplomas to 107 medical students 20 students of dentistry and 17 of pharmacy, making a total of 144.

Deaths.

On May 22nd, Dr. William J. Gills, a young physician of Farmville, died in Richmond.

At Leesburg, May 11th, Dr. Nelson G. West died at his home, aged 83 years. He was a Confederate surgeon.

At Berryville, May 15th, Dr. Alfred B. Tucker died at his home, aged 58 years. He leaves a widow and three children.

In Richmond, March 18th, Dr. M. G. Elzey died, aged 76 years.

WEST VIRGINIA.

At Huntington, May 15th, the West Virginia Medical Association elected the following officers: President, Dr. A. P. Butt, of Davis; Vice-Presidents, Dr. A. S. Bosworth, Elkins; Dr. G. C. Schoolfield, Charlestown; Dr. S. P. Lawson, Logan; Secretary, Dr. J. Howard Anderson, Marytown; Treasurer, Dr. H. M. Nicholson, Charlestown. Dr. J. R. Bloss, Huntington, was elected editor of the association magazine.

Reports from Sissonville, May 25th, were to the effect that smallpox was gaining headway there. The matter was placed before Judge Littlepage of the circuit court.

Deaths.

At Moundsville, May 3rd, Dr. I. M. Houston died at his home, aged 64 years.

High Power Electric Centrifuges

Send for Cat. Cn.

INTERNATIONAL INSTRUMENT COMPANY
Cambridge, Mass.

The American Negro
AS A
Dependent, Defective and Delinquent

By CHAS. H. McCORD, A.M.

This is the most comprehensive and authoritative discussion of the submerged Negro yet published. It is of good literary quality, frank and fair in treatment. It should be in the hands of every student of the perplexing "Negro Problem" **It is of special interest to physicians.**

Uniform with the proceedings of the Southern Sociological Congress, 342 pages, price $2.00 postpaid.

SOCIAL SERVICE BOOK CO.
205 7 Brown-Randolph Bldg. ATLANTA, GA.

LEUCOCYTE EXTRACT, SQUIBB

Prepared from healthy leucocytes according to Hiss. Indicated in general acute systemic infections where bacteriological diagnosis is uncertain. Also used in conjunction with the specific serums and vaccines in the treatment of Erysipelas, Meningitis, Lobar Pneumonia, Septicemia, Pyemia and Furunculosis.

No contra-indications are known. For clinical reports address:

E. R. SQUIBB & SONS - - NEW YORK

Typho-Serobacterin Mulford

For the Immunization and Treatment of Typhoid Fever

Action **"Rapid, Safe** and **Durable"**

The value of typho-bacterin for immunizing against typhoid fever is established. The results secured in the United States Army prove that it is more efficacious for the prevention of typhoid fever than vaccine virus for the prevention of smallpox.

Antityphoid Immunization is Harmless.—During the past four years over 200,000 persons, mostly in the military and naval service, have been immunized without any fatalities or untoward results.*

Typho-Bacterin is composed of killed typhoid bacilli suspended in physiologic saline solution, and the number of bacteria standardized per c.c.

In preparing Typho-Serobacterin the preliminary process of immunization is carried out by combining the killed typhoid bacilli with the amboceptors, agglutinins, etc., secured from the blood serum of sheep immunized against the typhoid bacillus. The bacteria and the antibodies in the serum combine permanently.

Serobacterins, being saturated with specific antibodies, are attacked by the complement of the blood and taken up by the phagocytes much more rapidly than unsensitized bacteria. Serobacterins are characterized by rapidity of action, freedom from toxicity, and the production of efficient and durable immunity.

Typho-Serobacterin Immunizing Mulford is furnished in packages of **three** aseptic glass syringes, graduated to contain: **First Dose,** 1000 million; **Second Dose,** 2000 million; **Third Dose,** 2000 million sensitized typhoid bacilli.

The usual dose for immunizing is 1000 million killed **sensitized** typhoid bacilli for the first dose, followed by a second and third dose of 2000 million after 2 to 5 day intervals.

Typho-Serobacterin Therapeutic Mulford is supplied in packages of **four** aseptic glass syringes, graduated to contain: **Syringe A,** 250 million; **Syringe B,** 500 million; **Syringe C,** 1000 million; **Syringe D,** 2000 million sensitized typhoid bacilli.

Typho-Serobacterin Mixed Mulford is used for the prophylaxis and treatment of paratyphoid and mixed infection. It is supplied in packages of **three** aseptic glass syringes, graduated as follows:

	First Dose	Second Dose	Third Dose
Bacillus typhosus	1000	2000	2000 million
B. paratyphosus "A"	500	1000	1000 million
B. paratyphosus "B"	500	1000	1000 million

Typho-Serobacterin Mixed is coming into general favor for preventive immunization as its use affords immunity against the typhoid bacilli and the paratyphoid bacilli, present in about 10 per cent of typhoid cases.

Full literature mailed upon request.

*Major Russell, Journal American Medical Association, August 30, 1913.

H. K. MULFORD COMPANY, Philadelphia, U. S. A.

Manufacturing and Biological Chemists

New York Chicago St. Louis Kansas City Atlanta New Orleans Minneapolis San Francisco Seattle
Toronto, Canada London, England Mexico City Australia: JAMES BELL & Co., Melbourne

The B-P Abdominal Supporter

Made to measure—not a stock affair.

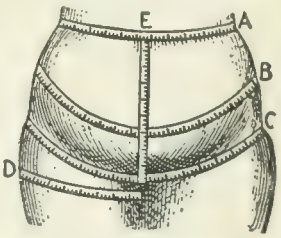
A new idea—cool—comfortable. Fits perfectly. Does not slip. A support—not a compress. No long wait. Indicated in

Pregnancy
Obesity
Hernias
Post-operative

We Make a Special Support for Entero-optosis

Write us for prices and literature

State whether for man, woman or child.



Take snug measurements over the skin.

A—Waist.
B—Abdomen.
C—Hips.
D—Thigh.
E—Height.

BOLEN MANUFACTURING COMPANY

213 BAIRD BLDG., OMAHA, NEB.

We exercise the most scrupulous care in the manufacture of our

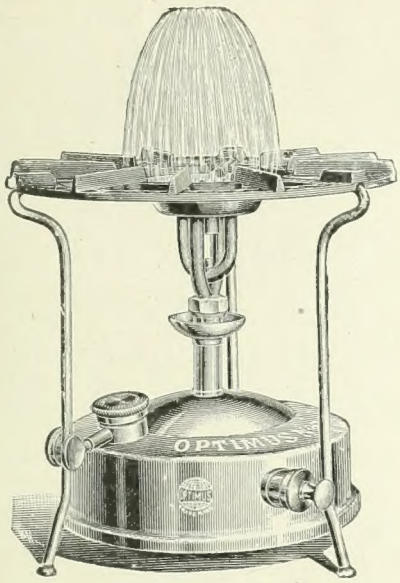
Pharmaceuticals

A bottle sealed from our laboratory is an assurance of quality within that would be hard to express in words; a trial only could adequately express.

VanAntwerp's
THE BEST ONLY

PHARMACEUTICAL LABORATORY

VAN ANTWERP BLDG. MOBILE, ALA.



OPTIMUS

KEROSENE STOVE

Burns Without Wick

No Soot -- No Smell -- No Smoke

Made Entirely of Polished Brass

Price - - - - $3.25

For sale by

The McDermott Surg. Inst. Co., Ltd.

734-736-738 Poydras St.

NEW ORLEANS, - - - LA.

MERCK & CO., New York, Rahway, St. Louis

Sole Distributors for the United States, of

"KELENE"

(Pure Chloride of Ethyl)

FRIES BROS., Manufacturers, 92 Reade St., New York

Best Local Anaesthetic

Also as Adjuvant to Ether in

General Anaesthesia

Welch's is bottled sunshine

The fresh, tart-sweet flavor of Welch's gives a satisfaction that no other drink does. Nothing takes away the sick-room atmosphere quicker than

Welch's
Grape Juice

Physicians need have no hesitation in prescribing Welch's for their patients. It is just the pure juice of carefully selected, fresh Concord grapes —unsweetened, unfermented, no coloring matter added, no preservatives.

We shall be glad to send you further information and literature of special interest to the medical profession if you will write, addressing

The Welch Grape Juice Co., Westfield, N. Y.

Glycerophosphate in Solution Change Chemically

For protection against such instability we offer

Tablets Glycerophosphates Compound P-M Co.

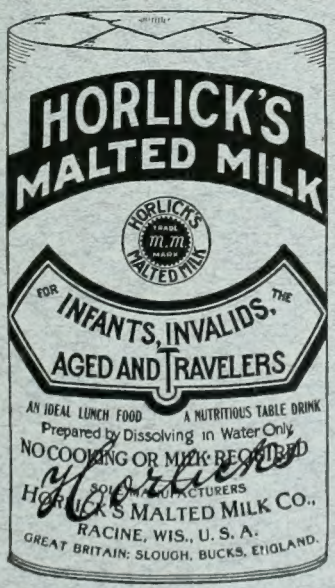
Each tablet contains:

Sodium Glycerophosphate 1 gr.
Calcium Glycerophosphate 2 gr.
Iron Glycerophosphate 1-8 gr.
Strychnine Alkaloid 1-120 gr.

A TRUE LINE

PITMAN-MOORE COMPANY
INDIANAPOLIS

ASK FOR HORLICK'S



THE ORIGINAL

HORLICK'S *The Original* MALTED MILK

A Complete Food, Perfectly Balanced

The wide spread interest in pure foods in general and clean milk in particular, leads us to anticipate your favorable consideration of Horlick's the Original Malted Milk in all cases where a critical selection of diet is desired.

It satisfies the nutritive needs of the system with the minimum strain upon the gastro intestinal tract.

A delicious, nourishing Food-Drink of unusual delicacy

Horlick's Malted Milk Co.
Racine, Wisconsin

You Can Use Germicidal Soap Every Day of Your Life.

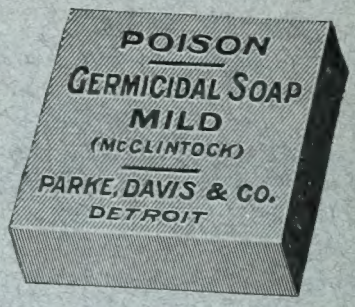
Germicidal Soap (McClintock), P. D. & Co., is one of the most powerful and useful of antiseptics and disinfectants.

In obstetrics and gynecology it is a valuable antiseptic, deodorant and lubricant for the examining finger or instruments.

In surgery it is an admirable general disinfectant. It can be used to prepare antiseptic solutions without measuring, without weighing, without waste.

In office practice it is useful as a disinfectant for the hands after examinations. It is efficacious in the treatment of parasitic diseases.

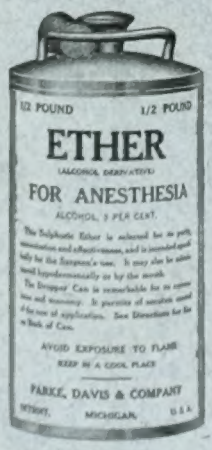
Germicidal Soap (McClintock), P. D. & Co., does not attack nickeled or steel instruments. It does not coagulate albumin.



Germicidal Soap, 2% (contains 2% of mercuric iodide): large cakes, one in a box.
Germicidal Soap, Mild, 1%: large cakes, one in a box; small cakes, five in a box.
Germicidal Soap, Soft, 1%: collapsible tubes.
Germicidal Soap, Surgical, 1%: cylindrical sticks, each in a nickel-plated case.

LITERATURE ON APPLICATION TO PARKE, DAVIS & CO., DETROIT, MICH.

Our New Ether Container Meets Every Possible Demand.



In addition to the dropper-tube which has been a notable feature of our ether package, we now provide the ordinary outlet, to be used with a cork. This outlet, as the can comes to the anesthetist, is tinned over—sealed. Cut away the top, if you wish, and insert the cork which is supplied with the package.

Most physicians using our ether for anesthesia prefer the dropper-tube, which is cut in the center when ready for use, the severed parts being bent in opposite directions, air entering one tube, the ether flowing from the other. Some anesthetists, however, for reasons of their own, desire to employ the old method. Whichever way is your way, the new can meets your need.

Our new ether package leaves nothing to be desired. "The purest ether; the best container."

Pound, half-pound and quarter-pound cans.

Home Offices and Laboratories,
Detroit, Michigan.

Parke, Davis & Co.